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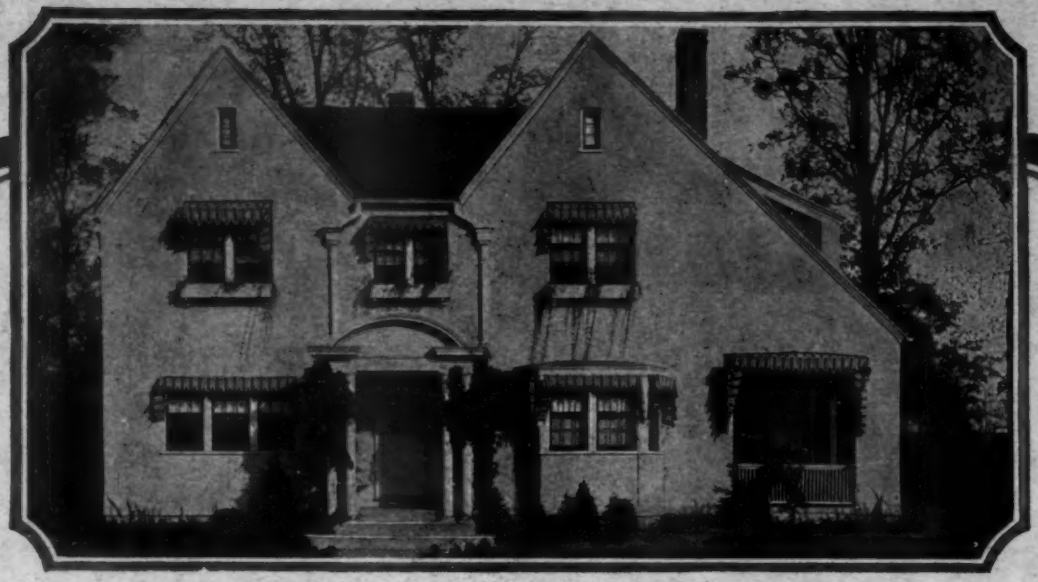
VOLUME CXVII MAY 5, 1920 NUMBER 2315



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VENICE

FROM A WATER-COLOR SKETCH BY JOSEPH McGINNISS

THE AMERICAN ARCHITECT

VOL. CXVII. WEDNESDAY, MAY 5, 1920 NUMBER 2315

The Rotch Traveling Scholarship

Some Notes as to What It Means and What It Is With a Biographical Sketch of the Late Joseph McGinniss and Illustration of His Work

THOUGH the Rotch Traveling Scholarship has been in existence so long, it is not generally known just what it is and what it means to the holder. The scholarship was the first prize established in this country for architectural students. It was endowed by the family of Benjamin S. Rotch, a wealthy Boston merchant, whose son, Mr. Arthur Rotch, was a prominent Boston architect, a Beaux Arts man and one whose interest was ever manifested in public affairs. The first award of the scholarship was made in 1884 and every year since that period a man has been selected and sent abroad, except for the two years which have just ended, when, owing to the conditions in Europe, traveling scholarships were out of question. The man who will receive the prize this year will, therefore, be the thirty-fifth holder of the scholarship. The fund originally was $50,000 and the allowance to each student was $1000 a year for two years, but due to the careful business management, especially of Mr. William Rotch, the present treasurer of the fund, the amount available has steadily increased until now there is available each year $1500 which the student receives to be expended in study and travel abroad under the direction of the Rotch Traveling Scholarship Committee. This committee is appointed by the Boston Society of Architects and has entire charge of the scholarship, making the award and directing the studies of the students abroad, always subject to the approval of the trustees. A great deal of liberty is allowed the students in the determination of their lines of study. There have been some who have spent all their time in the Ecole des Beaux-Arts. There are very few who have not given at least some time to this sort of study, and of late years most of the men have put in a good deal of time at the American Academy at Rome, where the Rotch scholars are admitted on the same terms as the holders of the Roman scholarship. Several of the scholars have extended their travels as far as Egypt and Greece. One of them made a tour of the world, including in his studies the work in India, China and Japan, sending back some extremely interesting work. This was Mr. Edward T. Foulkes, now a practising architect in San Francisco. Most of the holders, however, have limited their travels to England, France, Italy and

A DOORWAY, OXFORD
FROM A PENCIL SKETCH BY JOSEPH McGINNISS

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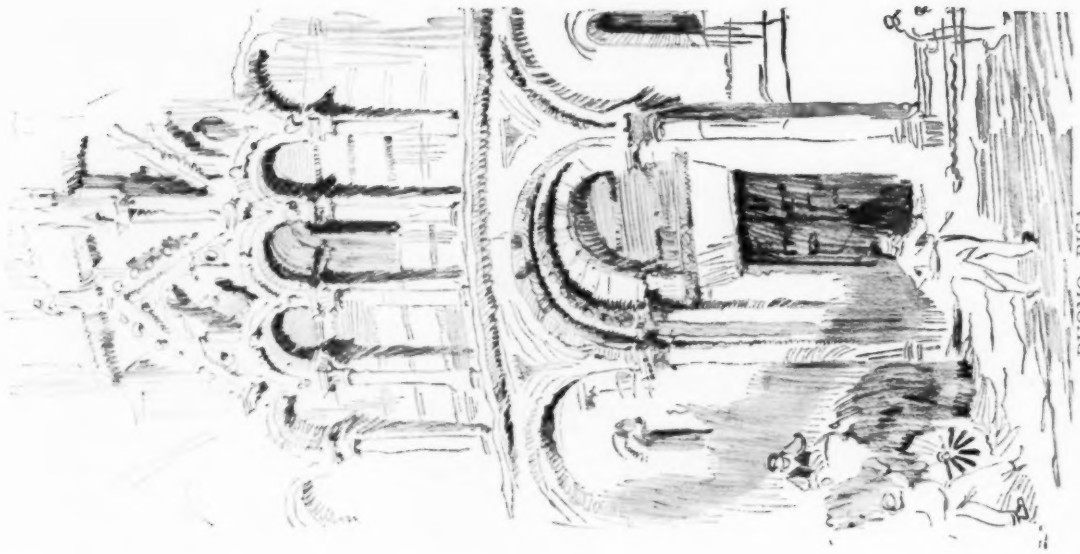
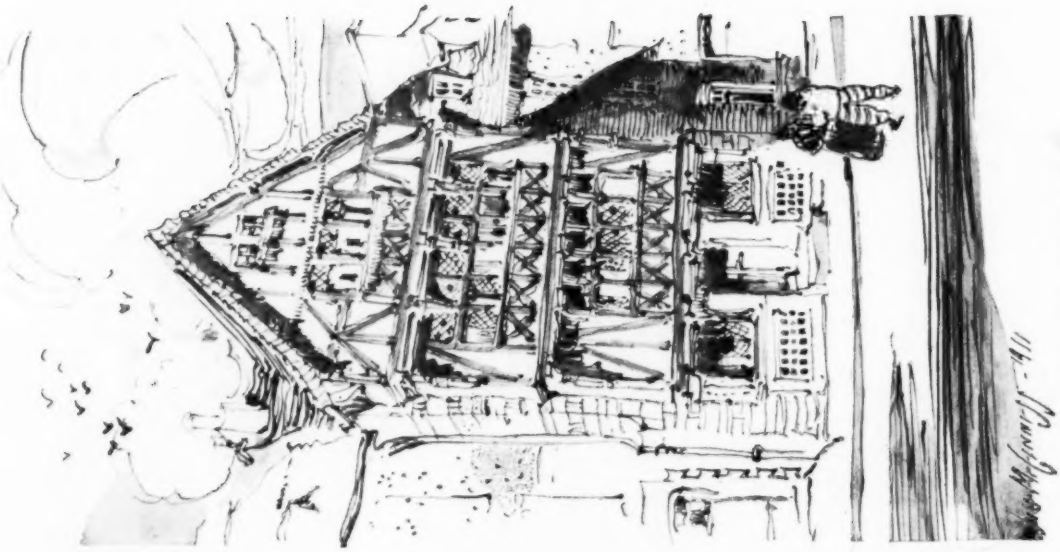


DUOMO, PISA

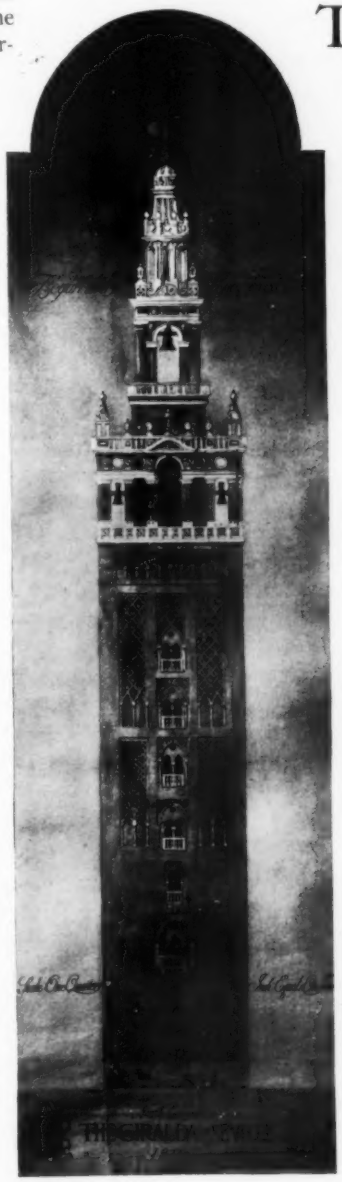


MORLAIX, BRITTANY

FROM PENCIL SKETCHES BY JOSEPH McGINNISS

Spain, and in the majority of cases France and Italy together have taken up about three-fourths of the time of the students. The men are left practically free to choose their own line of work, but the committee endeavors to help them in every reasonable way, simply requiring monthly reports and the return three times a year of all drawings made.

THE men are selected partly on their records and partly on the examinations. The graduates of certain recognized technical schools are admitted to the Competition in Design, but all other applicants are called upon to pass examinations in French, History of Architecture, Construction and Drawing. The award of the scholarship is on the Competition in Design, and to help the committee, the drawings submitted are judged by a jury which usually includes one past holder of the scholarship from the vicinity of Boston and two practising architects from other cities. The judges this year include Mr. Benno Janssen, of Pittsburgh, Pa.; Mr. Charles Zeller Klauder, of Philadelphia, and Mr. J. Lovell Little, of Boston. It is rather interesting to notice the uniformity of the standards which seem to have been accepted by the judges. During the thirty odd years of the scholarship there have been naturally a great variety in architectural character of the men who have helped. Some architects have served on the jury who were pronounced modernists of the Louis Sullivan school, and on the other hand there have been many of the most rigid academic type. The problems, too, have varied from those of a light, imaginative character to the most severely classic problems, but almost without exception the awards have been made first on the basis of the plan, and second, on the academic composition, mere draughtsmanship really counting for very little. It is considered, on the whole, an encouraging sign that decisions are arrived at in this manner, for it implies a recognition by the profession as a whole of the fundamental principles of design which have been worked out better by the Ecole des Beaux-Arts than by any other one school, and while the designs have not been limited to the Beaux-Arts designs, the principles of design which have attained so much favor in Paris have seemed to dominate the choice here.

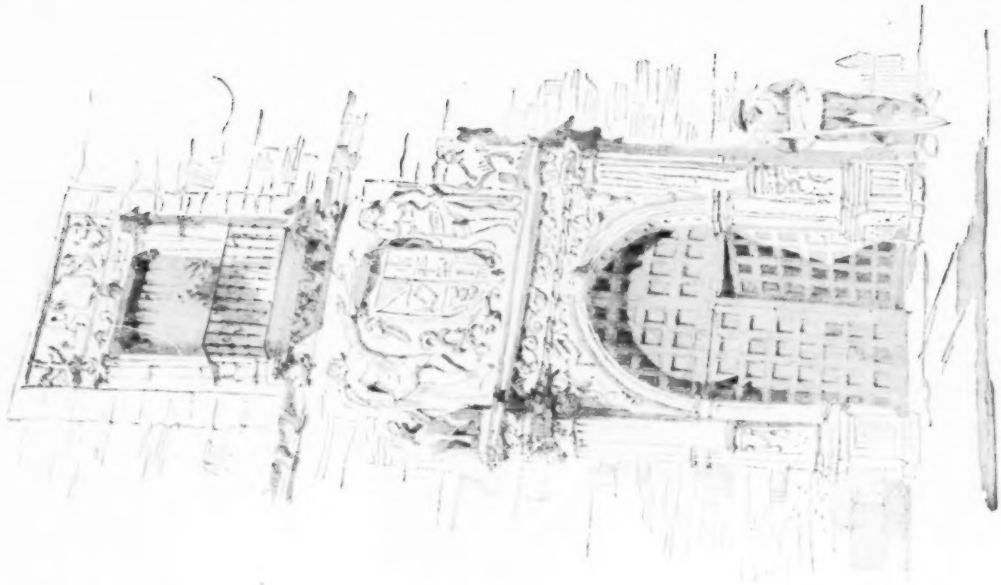


FROM A DRAWING BY JOSEPH McGINNISS

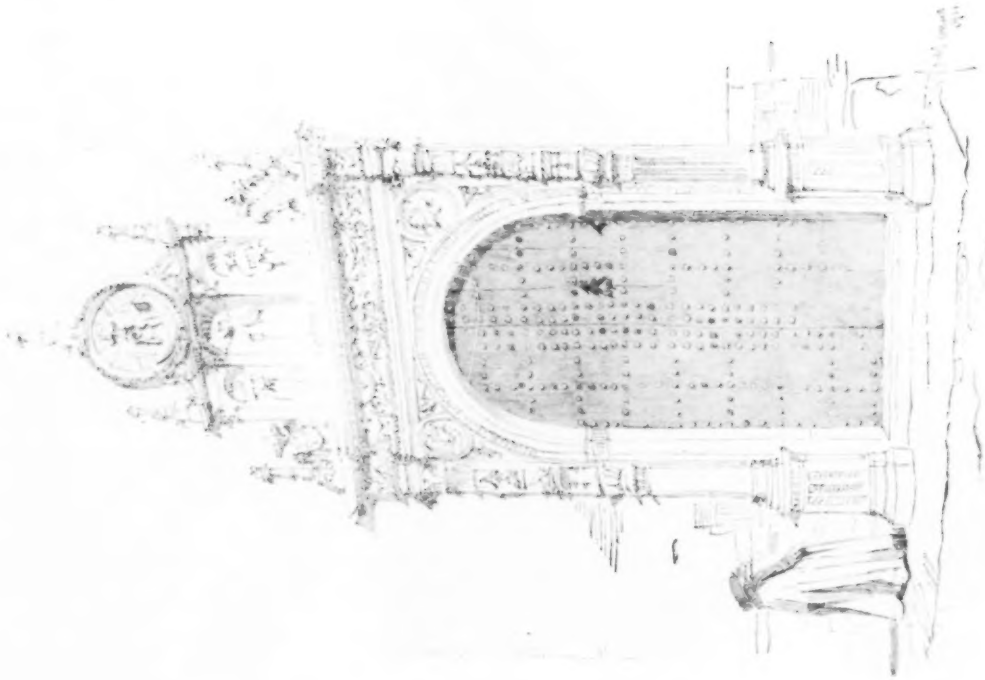
THE scholarship is limited to men under 30 who have worked during two years in the Massachusetts office of an architect residing in Massachusetts. This necessarily limits the choice. It also means that while the men come from other places to study in Boston for the scholarship, they do not necessarily settle in Boston on their return. As a matter of fact, more than one-half of the former holders are now settled in and about New York City, and out of the total number only a little more than one-third are located in Massachusetts, consequently the profession in other cities is profiting quite as much as Boston by the work of these men. The average of attainment by the Rotch men has been such as seems to justify the establishment of the scholarship. Among the practising architects who have held the scholarship may be mentioned Mr. Henry Bacon, Mr. H. VanBuren Magonigle, Mr. A. W. Lord and Mr. F. C. Hirons of New York; Mr. H. B. Pennell, Mr. George F. Newton, Mr. S. W. Mead, Mr. C. H. Blackall, Mr. Walter H. Kilham, Mr. L. C. Newhall, Mr. W. L. Mowll, Mr. James Ford Clapp and Mr. Israel P. Lord of Boston; Mr. William D. Crowell of St. Louis; Mr. Horace G. Simpson and Mr. Edward T. Foulkes of San Francisco; Mr. Wm. L. Welton of Birmingham, Ala., and Mr. R. C. Spencer, Jr., of Chicago.

The traveling scholarship was the first of its kind and is still one of the very few scholarships which is not directly connected

FROM PENCIL SKETCHES BY JOSEPH McGINNISS



CASA DE ANGULO, BURGES



CONVENT OF SAN CLEMENTE, TOLEDO

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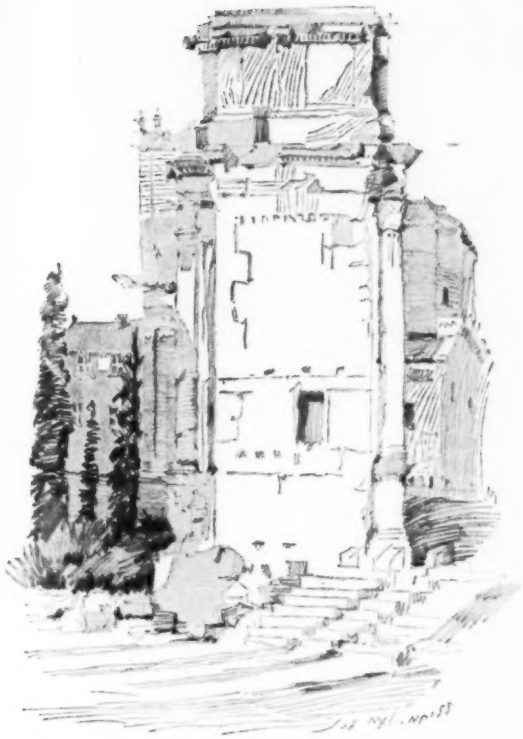


ARCH OF TITUS, ROME

with some educational institution, but there are many which are attached to the architectural schools, so that whereas thirty-six years ago the student had only one choice, there are now thirty or forty throughout the country, and yet the Rotch scholarship still holds its attractiveness and every year there is a choice and select body of young men who earnestly compete for this prize. The scholarship can fairly be called one of the most important educational factors in the professional life of this country.

Volume on Landscape Architecture in Preparation

Prof. Elwood of Ohio State University Seeks Co-operation of the Profession

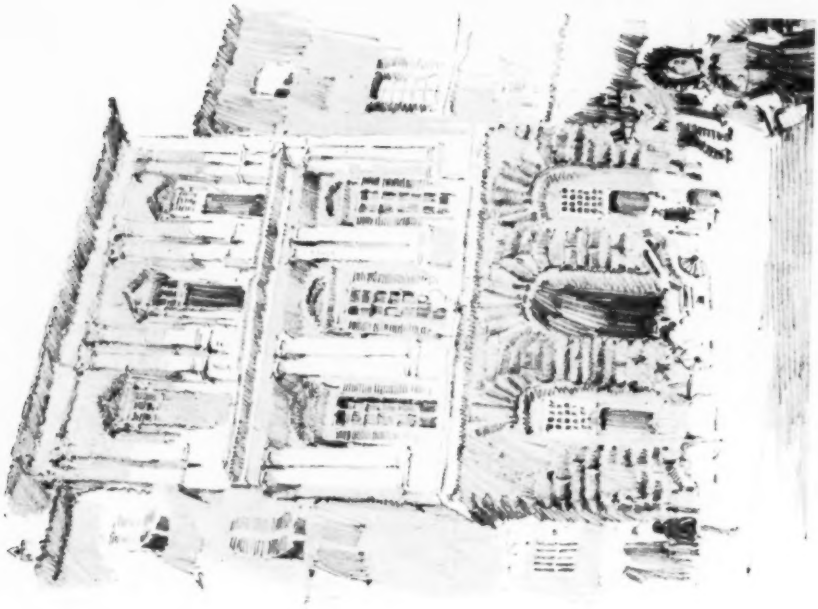
For many years there has been a decided need for a rather elaborate pictorial representation of the best work that has been done and is being done in the United States along landscape architectural lines. With this in mind, Philip H. Elwood, Jr., professor in landscape architecture at Ohio State University, Columbus, has been collecting a large number of photographs representing the best work in this field, and has examples from the most successful architects and landscape architects in this country.

Prof. Elwood desires to increase this collection as far as possible to include all the desirable work complete or still in progress. Such photographs as are eligible are to be published in the proposed volume by the Architectural Book Publishing Co. of New York.

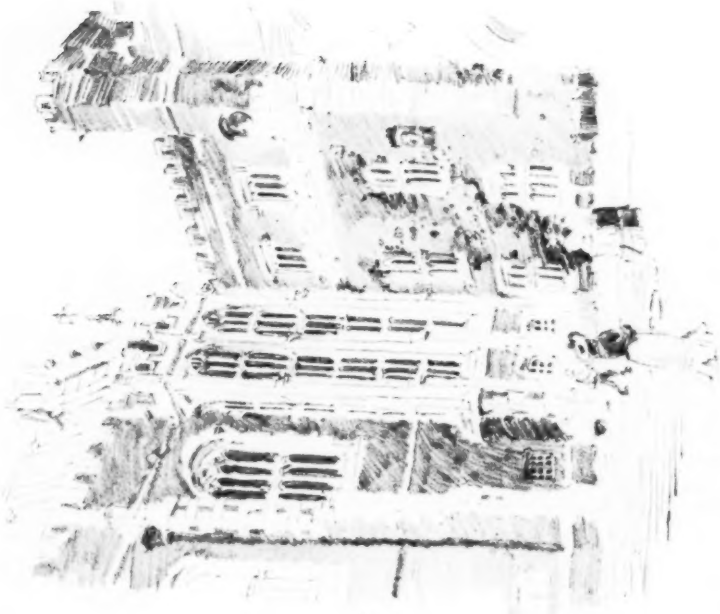
The work will cover a field that is now very inadequately photographed. No publication is available up to date that groups the illustrations in a professional way and gives full credit to the designer as will in every case be done in the forthcoming book. Communications may be addressed to Prof. Elwood.

PALAZZO DAVANZATI, FLORENCE

FROM PENCIL SKETCHES BY JOSEPH McGINNISS



PALAZZO UGUCCIONI, FLORENCE



A QUADRANGLE, OXFORD

FROM PENCIL SKETCHES BY JOSEPH McGINNISS

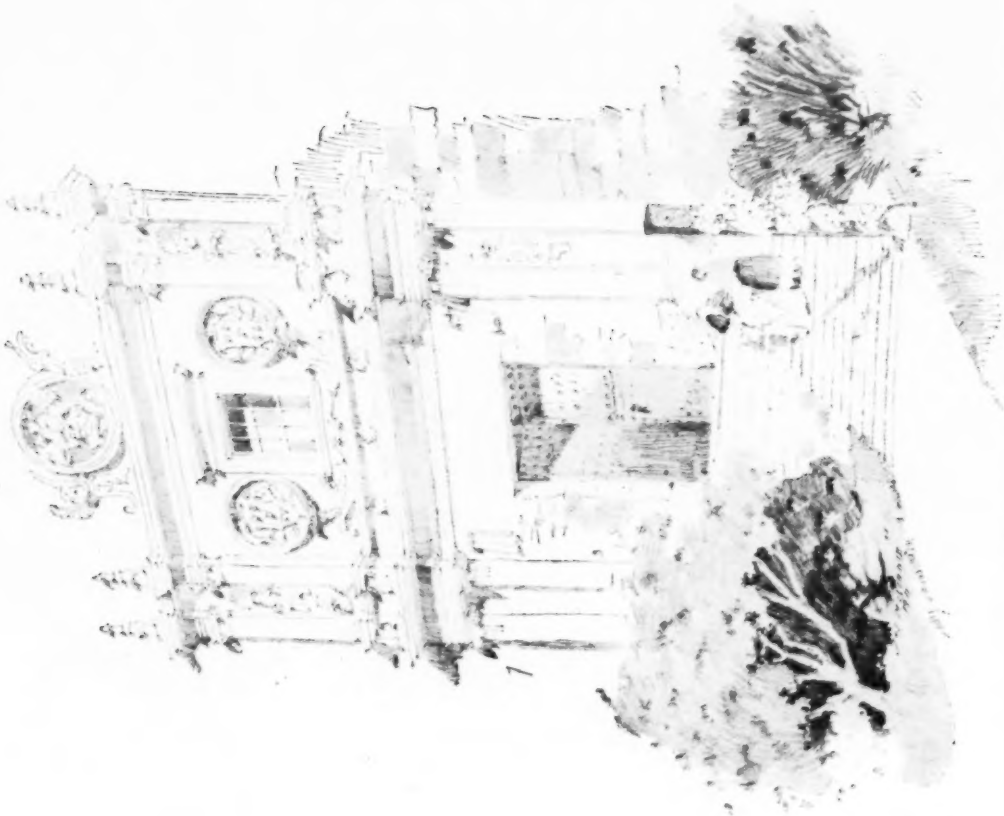
Joseph McGinniss—1882-1919

A Biographical Sketch

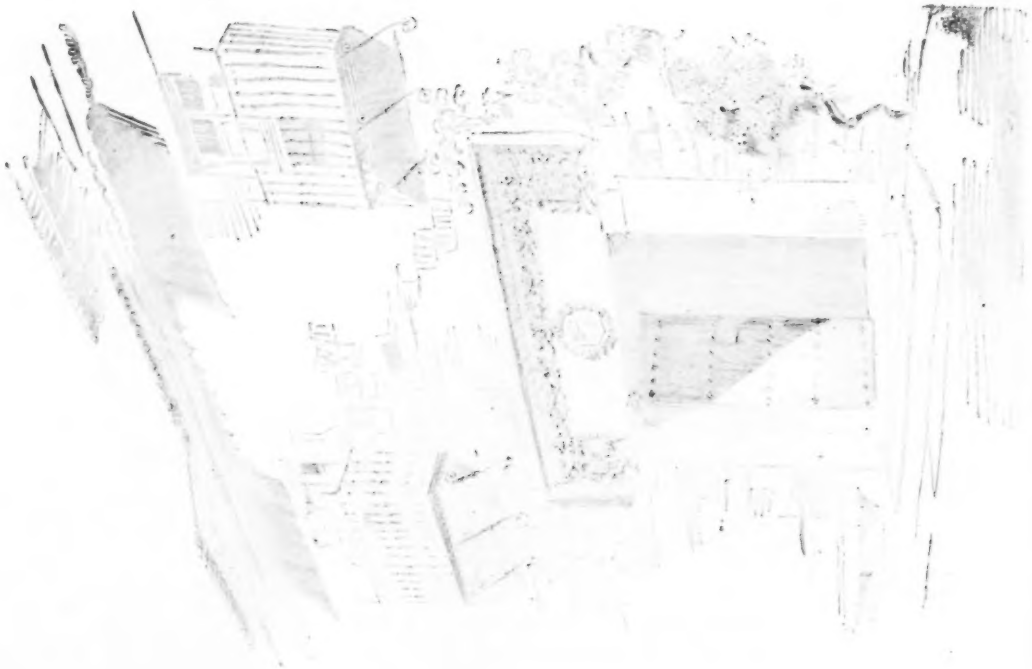
By C. H. Blackall, *F.A.I.A.*

JOSEPH McGINNISS was born in Boston in 1882, studied at the Rice Training School, graduated at the English High School and studied architecture for three years at the Institute of Technology. He then took special problems at the Boston Architectural Club atelier, being employed meantime in the offices of Coolidge & Carlson, Codman & Despradelle, E. B. Stratton and Wheelwright & Haven. He entered the competition for the Rotch Traveling Scholarship in 1910 and won the prize with a most brilliant design for a Midway Station of the Boston Railroad Tunnel. He went abroad and immediately began to send back some most interesting drawings which rank among the best the scholarship has ever received. He returned to Boston in 1912 and very shortly after that opened an office and was able immediately to command a very interesting and high practice. He built for the City of Boston an addition to the City Hospital, a number of infirmary buildings at Long Island and five different engine houses. He also built two of the city's schools, one in Dorchester and one in the North End, and he was called upon to build at different times four Catholic

CHURCH OF MADRE DE DIOS, BURGOS
FROM A PENCIL SKETCH BY JOSEPH McGINNISS



ARCHBISHOP'S PALACE, SALAMANCA



AVILA

FROM PENCIL SKETCHES BY JOSEPH McGINNISS

churches, one at Hull, one at East Milton, one at Wellesley and one at Cambridge, all of which came out very well and established his reputation as one of the brightest young architects in the city. His last and most prominent work was the Codman Square Theatre in Dorchester, which was begun in 1918. In the fall of that year he was attacked with the influenza, which rapidly developed into pneumonia, and both he, his wife and his very small child died within a few days of each other. He was buried in the church which he had designed and built in Wellesley, September 23, 1918.

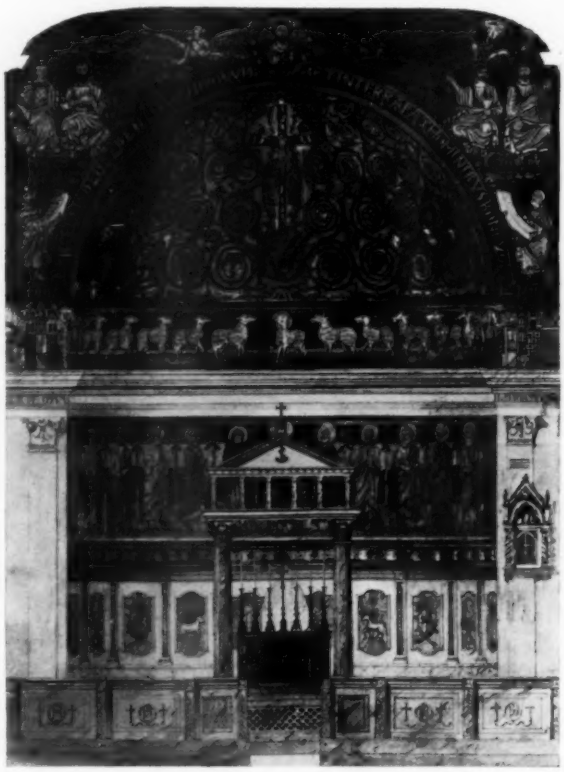
DURING the nearly forty years of the Rotch Traveling Scholarship only two deaths have occurred. The first was Mr. Louis W. Pulsifer, who died very soon after his return and before he had demonstrated his business capacity. The second was Mr. McGinniss, who in a space of less than six years had built up a business of high character and had shown himself to be possessed of many of the essential qualities which go to make up the successful architect. His work is characterized throughout by most sincere, conscientious, faithful study. He gave everything his personal attention and most of his drawings were made with his own hand. He gave himself up so wholly to his profession that he had little time for association with other architects, though he was known and his work admired by many and his death was a great loss to the profession in Boston.

ARCHBISHOP'S PALACE, SALAMANCA
FROM PENCIL SKETCHES BY JOSEPH McGINNISS

AVILA

The reproductions of the work he did while holder of the scholarship, which are presented in this issue of THE AMERICAN ARCHITECT, cannot wholly catch the spirit of the original drawings. The delicacy of touch in his pencil work, the sense of pictorial mass which he showed in his water colors, and his appreciative rendering of Spanish and Italian detail are most sympathetic and supply the imaginative quality which is so apt to be absent in our modern work. Of his more serious large drawings the reproductions can do but faint justice. The Giralda Tower of Seville is a drawing measuring several feet in height, drawn to a scale of ¼-inch equals a foot, and rendered in very full color with a brilliant sky, all of the Moorish details being very carefully and appropriately indicated. The interior of the church of San Clemente likewise can give but a slight idea of the elaboration of the original drawing. It is to a large scale and all of the elaborate and extremely interesting mosaics are shown in full color. In the house at Viterbo he

presented a lighter subject, but he showed his appreciation of the subject by the accessories, the two little perspectives in one corner, and the charmingly indicated medieval figures which give scale to the drawing. This is a ½" scale drawing. Mr. McGinniss was very much impressed with the Spanish work and his drawings are most elaborate in their presentation, always in full color, and with an ever-recurrent evidence of his interest in the subject of the architecture. Note, for instance, the cavalier drawn in the corner of the pavilion of the Palace of Monterey at Salamanca, most interestingly indicated and just the right touch to show how thoroughly he enjoyed the Spanish spirit. But his work was by no means all chosen from this debatable field. The doorway from St. Peter's and the façade of the chapel of the Palace of Versailles indicate how wideawake he was to the possibilities of combining expression and imagination with his envois. It should be explained that the regulations of the scholarship require each holder to send back three serious drawings every year of measured work of subjects approved by the committee, but the utmost liberty is allowed each man and he virtually made his own choice of subjects, so that whatever merit there is in the choice of drawings which Mr. McGinniss presented is wholly his.



SAN CLEMENTO, ROME
FROM A DRAWING BY JOSEPH McGINNISS

FOUR examples are given of his water colors. Mr. McGinniss thought in color even when in monotone and these reproductions, while wholly failing to give any real color, certainly suggest most rich and lavish tones. How essentially Roman is the drawing of the Temple of Vesta with the ancient tower in the distance, and how full in color the whole composition seems to be; and in the charming sketch of the Porto Romano at Siena the simplicity of the medium of the treatment lends itself to the delightful sense of color both of the wall and foreground and the bit of landscape through the open door. The original water color is a vivid contrast of rich burnt sienna and brilliant blues. His water colors were a joy to all who knew them intimately and one could not see them without envying the opportunities which Mr. McGinniss knew so well how to improve. Even the black and white reproduction of the Venice water color makes one feel the rich yellows and browns of the wall, the dark green of the foliage and the delicate blues and greens of the water.

His pencil sketches are no less a delight to the artist. It is interesting to consider that he had had very little experience in sketching or in the use of pencil before he went abroad and he developed his style almost at once, these charming bits of crisp, picturesque black and white, including samples from his first as well as from his last year; and that he should so cleverly catch the spirit of the half timber work in Normandy, or the delicate elaboration of the Spanish work, or the massive qualities of the Florentine and Roman palaces, is pretty good evidence how thoroughly he knew just what he wanted to find and managed to put it on paper. We in the profession to-day are far too prone to include the pictorial side of architecture. Photographs and photographic reproductions have cut out a very considerable portion of the imaginative element from design, and it is well for the busy practitioner sometimes to study work just like this of Mr. McGinniss' and see how effectively he draws, how appreciatively he masses his lights and shadows and what a keen sense he has of the picturesque. His death was untimely. Had he lived there is reason to feel that he would have won the highest position in the profession.

EDITORIAL

The Old Order Changeth

MANY architects in England are fearful that the proposed high buildings which will soon rear their bulk in London will so dwarf the many beautiful Christopher Wren churches as to decrease their artistic effect through the inevitable loss of scale. As one man writes, "there is no more beautiful sight in the world than to sail up London's river and behold these beautiful spires dominated by the dome of St. Paul's."

It is difficult to advance an argument that would find listening ears, urging a reconsideration of the building of tall structures. Trade and commerce must first be served in these practical days. Speculative building must needs have its way. The golden guinea has greater allurement than the gilded spires of Sir Christopher Wren. So then, these "finger posts that point the road to heaven," will soon be hidden from the general view. Where once in all their stately beauty they dominated their locations, they soon will by their towering neighbors be shrunken to pigmy proportions. The pity of it. In view of the world-mad attitude toward money and its acquisition, no man will be able to protest to a degree that will earn him a patient hearing.

MEN born in New York, or whose residence in the city dates from the early 70's, will recall when the district south of Canal Street presented a comparatively even cornice line of what would now be considered low buildings. In its quaint enclosure, where now is reared the Equitable Building, stood the old meeting house where during the Revolutionary War the British Dragoons stabled their horses and defiled a sanctuary. At the head of Wall Street stood and yet stands Trinity Church, and but a few short blocks north, the venerable St. Paul's.

In those days of forty years and more ago, the spires of these churches afforded points of observation to which the city man conducted his country cousins, for a wide and comprehensive view of Manhattan Island and its environs. It was a sight once seen, never to be forgotten, when on a bright Summer's day one might view from Trinity's spire the long stretch of the Hudson River front, now the Riverside Drive, clothed in great masses of green foliage, or the shorter expanse of the East River and the "Sound," with its blue waters sparkling in the sun. Central Park then, did not as now, show a parallelogram of green on a dreary expanse of brick and mortar. The actual detection of its boundaries became difficult as it was merged in the foliage of trees that lined the city streets or that large area, now crowded thick with apartment houses, where tall trees of large girth and great age formed groves through which the New York man and his family walked on Sundays and holidays. All these things could be seen from Trinity's or St. Paul's tall spires. All this is now changed.

Trinity, like the truth it typifies, lies at the bottom of a well of brick and mortar. It is only that its spacious churchyard acts as a barrier to further encroachment, that it has not been completely submerged. Does anyone doubt that eventually this fine old church and perhaps its chapel of St. Paul's will meet an end by removal or rebuilding on a less restricted site? We shall be told it is sentiment to indulge in such regrets as the passing of the isolated dignity of these noble structures. Viewed in the light of modern opinion it may be. But to the man born in New York who venerates its traditions and in whom respect for these old churches is a part of his creed, all the thrills he may feel when as returning from abroad he views the towering masses of lower Manhattan, will not compensate for the passing of the dignity of location that once was Trinity's and St. Paul's and other venerated and good architectural churches.

So then, it is possible to read with fine understanding the expression of regret by the Londoner when he regards the possibility of a similar fate overtaking that wonderful group of churches, each a masterpiece, by Sir Christopher Wren.

"Old fogeyism," we shall be told. "Blocking the path of progress" and other reproaches will be made. Perhaps it is so, but sometimes it is wished that we could be spared the spectacle of such degradation and that it might be postponed until after we were

gone. Selfish—it may be. What's the use? "The old order changeth," but some of us do not.

Labor Plays at Cross Purposes

AN anomalous, if not an amusing, condition is created by the announced intention of the New York Building Trades Employers' Association to grant, effective as on May 1, a wage increase of one dollar per day. This makes the new scale $9 per day for blacksmiths, boiler-makers, carpenters, framers, cement and concrete masons, and many other departments of the building trade. It does not, however, apply on the wage scale of bricklayers, now receiving $10 per day.

The amusing and contradictory feature is to be found in the fact that on the day this raise was made public (April 24) a parade of New Yorkers, attired in overalls and old clothes as a protest against the ever-mounting cost of clothing, was being held. Of the 115,000 mechanics whose daily wages were augmented by this increase, there were undoubtedly a large number who took part in this parade. On May 1 there was started a tenants' strike against the landlords as protest against unreasonable advance in rents. Probably a goodly proportion of these "wage-boosted building mechanics" were also active in this movement. Further, the ever-restless and always grasping clothing trades employes have presented a demand to the manufacturers asking for increased wages and decreased production.

Contemplation of these conditions excite the risibilities at the same time they provoke the most just adverse criticism. Could anyone imagine a situation more filled with inconsistencies?

It is but a few months ago since it was announced that by a special agreement between labor and the employers, there was insured peace in the building trades for the next two years at least. A provision in this agreement called for an advance in wages if the cost of living could be demonstrated to have advanced. This demonstration has been so very easy that the employers carefully standing by their agreement have announced the one dollar per day increase.

At the outset of this agreement a flat rate of $8 per day was fixed in all branches of the trade. To this rate the bricklayers refused to agree, claiming their occupation was one where working days were controlled by weather conditions and they—the bricklayers—refused to join with the Building Trades Council in its agreement with the Building Trades Employers' Association. Here there was created an impasse. With the bricklayers refusing to work for $8 a day, the entire building trade was for a considerable period tied up. Finally a committee headed by the Mayor, acting as arbitrator, effected an agreement and the bricklayers went back to work on a $10 a day basis.

One might feel reasonably sure that the way had been made clear for a peaceful resumption of long-delayed building operations. But hope seems futile, as now it is learned that lesser paid mechanics are claiming discrimination. They are threatening trouble. Could anything be more unreasonable? It even arrives at the point of becoming ludicrous.

In these squabbles and in their final adjustment, the ultimate consumer—the building owner—as usual bears the burden. Work of major importance is to-day conducted on the basis of cost-plus contracts. This extra $1 per day conservatively figured as representing a total of $700,000 a week must be paid by the client, or owner. Unless there is a fixed fee arrangement it will represent an added profit to the contractor.

Does labor see the inconsistency of its objections to high rents, high cost of daily living, and all the "high" ills that now affect us, in its attitude toward its daily wage? It would not appear that it did.

SCENE FROM SHERIDAN'S "THE RIVALS"

PRODUCED BY THE DRAMA DEPARTMENT, SCHOOL OF APPLIED ARTS, CARNEGIE INSTITUTE OF TECHNOLOGY. DESIGN BY WOODMAN THOMPSON. NOTE THE PORTABLE FOOTLIGHT TROUGH AND ABSENCE OF APRON. THIS PHOTOGRAPH WAS NOT TAKEN BY NORMAL STAGE LIGHTING, HENCE THE LATERAL SHADOWS

Stage Design in Communal Buildings

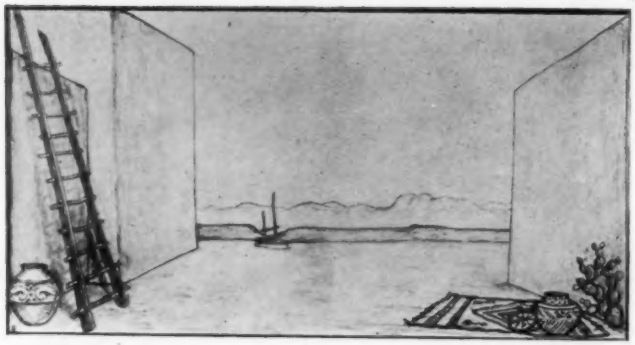
By George M. P. Baird

II

Construction and Equipment

THE scope of these papers is too limited to permit discussion of auditoria in communal buildings except in so far as they directly contribute to or modify the dramatic craftsman's work on stage. The technology of optics, acoustics, ventilation, heating and safety in the region outside the proscenium wall are fully covered in easily procured texts and need no exposition here. It goes without saying that the audience must have a feeling of comfort and security if it is to enjoy the performance on the stage, and that no pains should be spared to insure this result.

The auditorium must be planned so that the words of the actors may be heard and that a good view of the stage may be had from any seat. This is the only imperative limitation of size. The unfortunate association of the word *"little"* with the art-theatre has led to many a stupid blunder and unnecessary reduction in capacity. The littleness of the pioneer art-theatres was dictated by economic and legal considerations and not by any ambition to be tiny. They succeeded not because they were small, but in spite of that misfortune. It is folly to perpetuate limitations when a reason for them no longer obtains. Intimacy there must be, but intimacy does not mean constriction. It is



SIMPLICITY IN MODERN STAGE SETTING

Sketch of setting for author's production of "Mirage" at the University of Pittsburgh. Scene—roof of Hopi pueblo. Materials—blue horizont, adobe-colored screens and floor-cloth and characteristic properties. The illusion of distance and the atmospheric effects in a desert country were secured by the magic of manipulated lighting

achieved by design and internal proportion, calculated decoration and effective illumination, rather than by cramping. The ideal auditorium is one in which the maximum number of people can be comfortably accommodated and in which no individual is deprived of his right to see and hear all that transpires within the frame of the proscenium arch.

Decoration should be as chaste and simple as possible and innocent of the wedding-cake or stove-front atrocities in design so dear to the heart of the commercial theatre. The color scheme should be restful and harmonious; the illumination ample but diffused and free from hard points of light. Ornate mouldings and elaborate orders should not be used to define the proscenium opening. It should have just sufficient differentiation to mark it as the focus of interest and to arouse a pleasant feeling of anticipation and curiosity in the mind of the audience pending the rise of the curtain. The curtain may be made the dominant color note of the room, but it should be devoid of the pseudo-murals, and painted draperies all too frequently displayed. Let the architect and the decorator bear in mind that the auditorium is the servant and the hand-maid of the stage, and that she must wear no garment and make no boast which will detract from the interest and beauty of her regal mistress.

The Stage

To most people, the term *stage* means that part of the theatre which is visible to them through the proscenium arch and upon which the action of the play takes place. This is an unfortunate misconception and is responsible, no doubt, for much of the prevalent bad design. The true stage is from four to five times larger than the central, visible portion or *playing stage*, and includes, in addition to it, the unseen *wings* to right and left and the invisible flies above. Roughly the *wings*, taken together, are equal to the central playing stage, while the *flies*, which extend over the central portion and the *wings*, rise above them for a distance equal to twice the height of the proscenium arch plus an amount sufficient to permit idle scenery to be raised beyond the view of spectators seated in the front row of the auditorium. Since, in general, the dimensions of the stage are fixed in relation to those of the proscenium opening, the determination of the latter is the first point to be considered in any plan.

Mr. Claude B. Hage, construction engineer for the Century Theatre of New York City, has evolved a scheme of relative dimensions based upon the number *seven* and its multiples. The following tabular presentation of his idea is abstracted from a recent article by Mr. Irving Pichel.[2]

	7 feet less than width		
Proscenium height			
Proscenium width	28	35	421
Height of Loft	56	63	79 to 84
Width of Stage	42	56	70
Depth of Stage	21	28	35 to 42

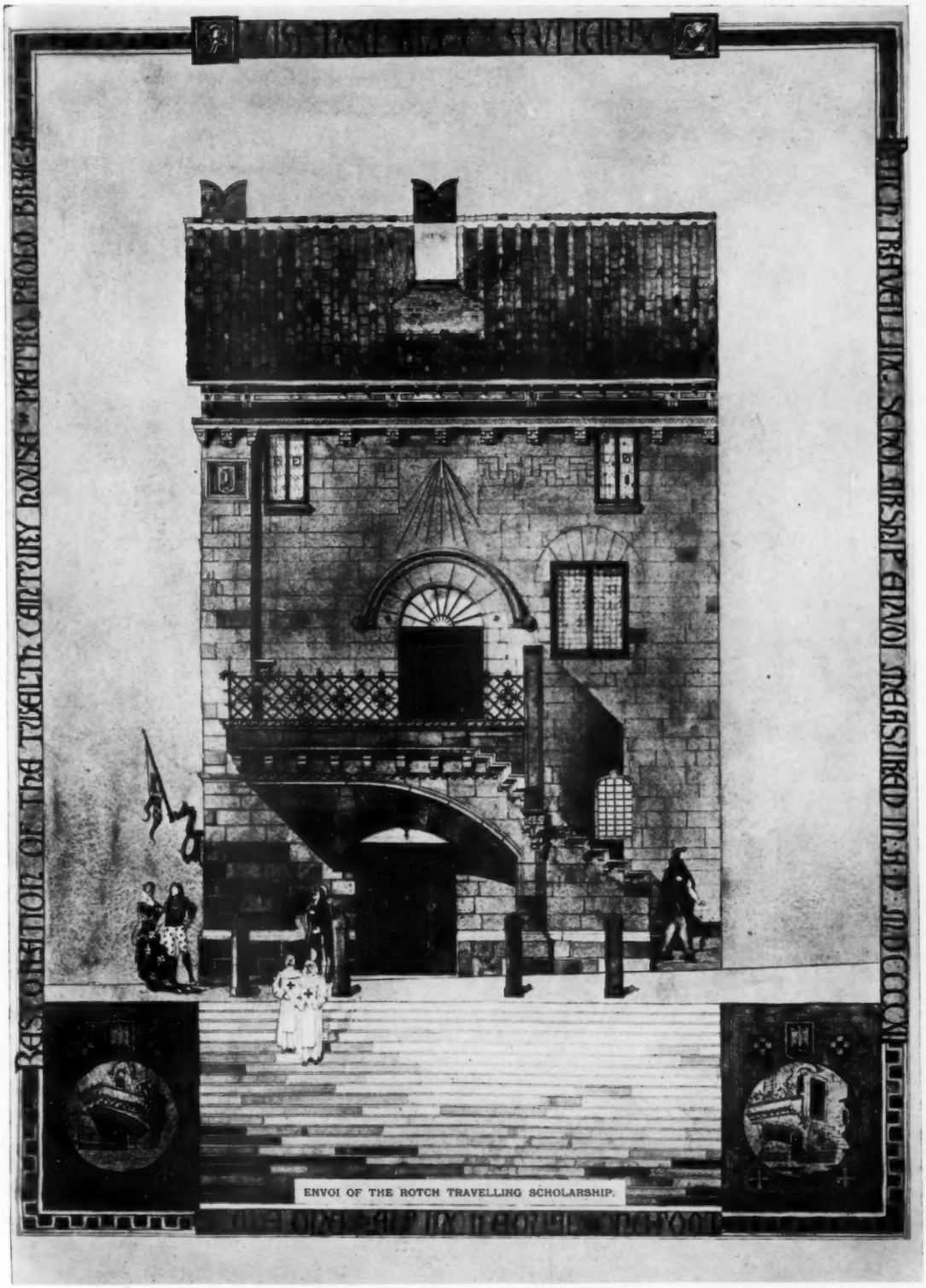
This is fairly representative of commercial theatre practice, but requires modification to fit the needs of an art-stage. Thirty-five feet[3] is an excellent width for the stage of a communal building

[2] *Theatre Arts Magazine, Jan. 1920, page 36.*

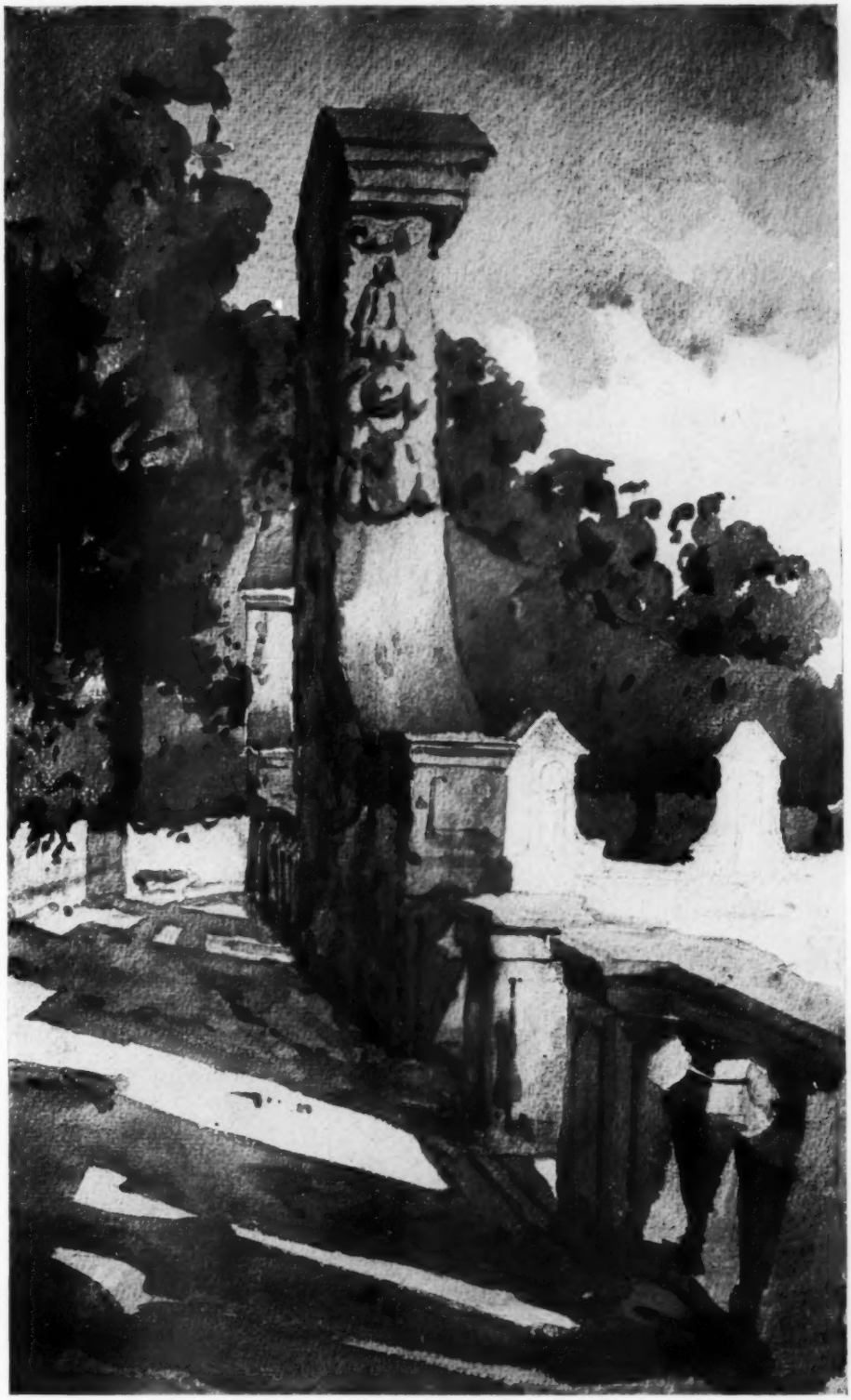
[3] *An opening less than 20 (wide) x 14 (high) will throw the human figure out of scale.*

REALISM BY SUGGESTION ON THE ART STAGE

Sketch of setting for author's production of "The Terrible Meek" by Charles Rann Kennedy, at the University of Pittsburgh. Rock-work and crosses modeled in the round

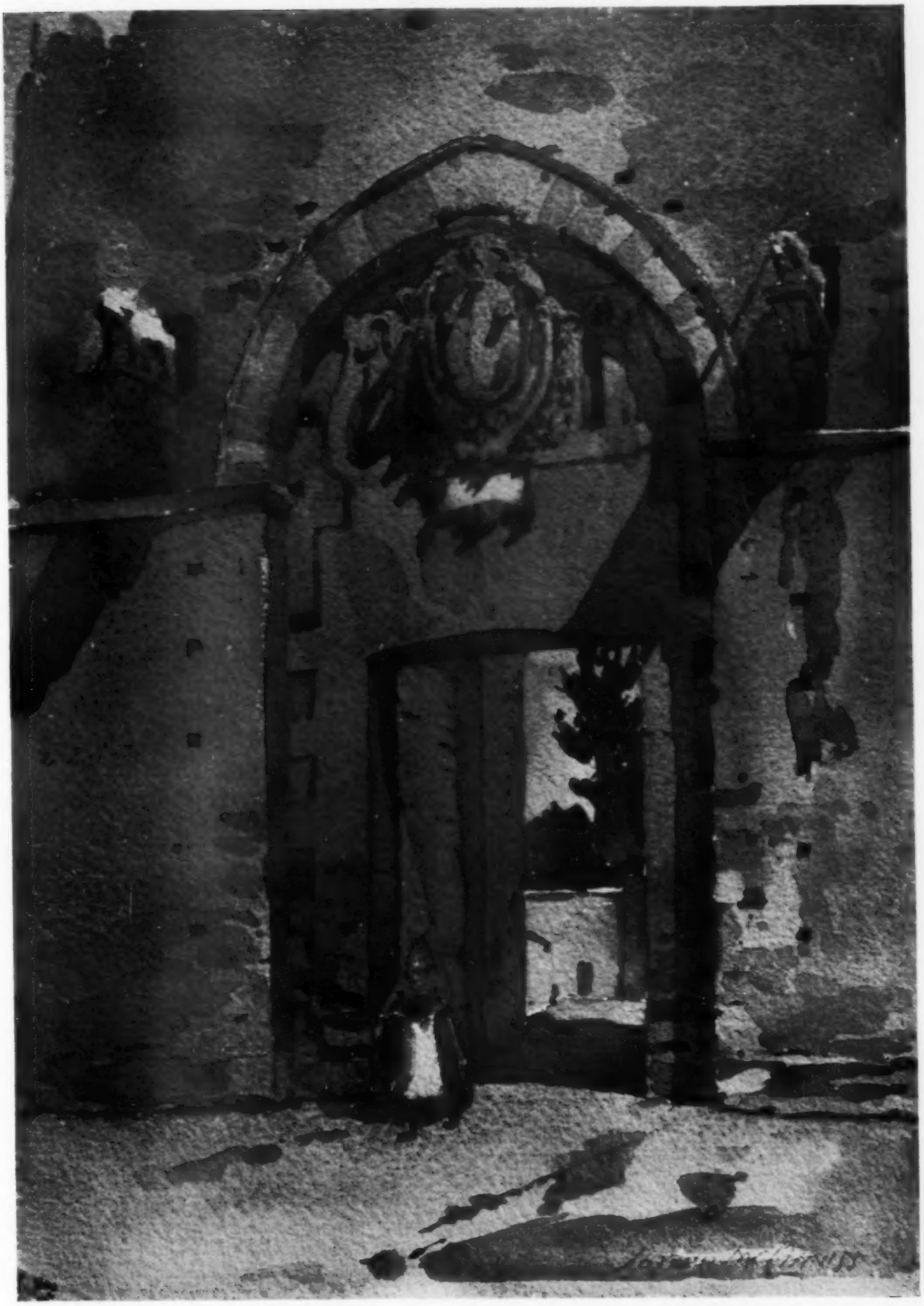


FROM A DRAWING BY JOSEPH McGINNISS



BOBOLI GARDENS, FLORENCE
FROM A WATER-COLOR BY JOSEPH McGINNISS

TEMPLE OF VESTA, ROME
FROM A WATER-COLOR BY JOSEPH McGINNISS



PORTA ROMANA, SIENA

FROM A WATER-COLOR BY JOSEPH McGINNISS

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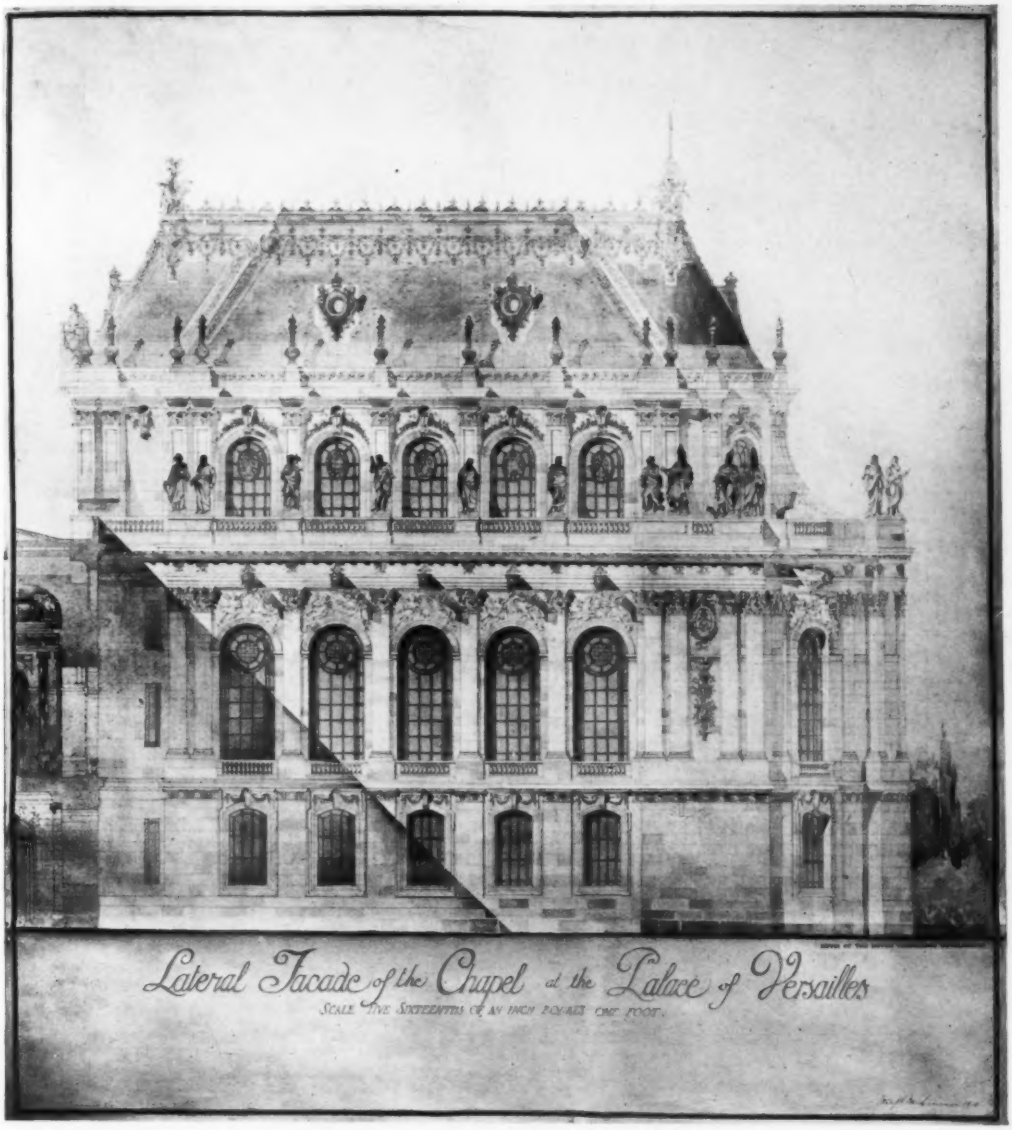

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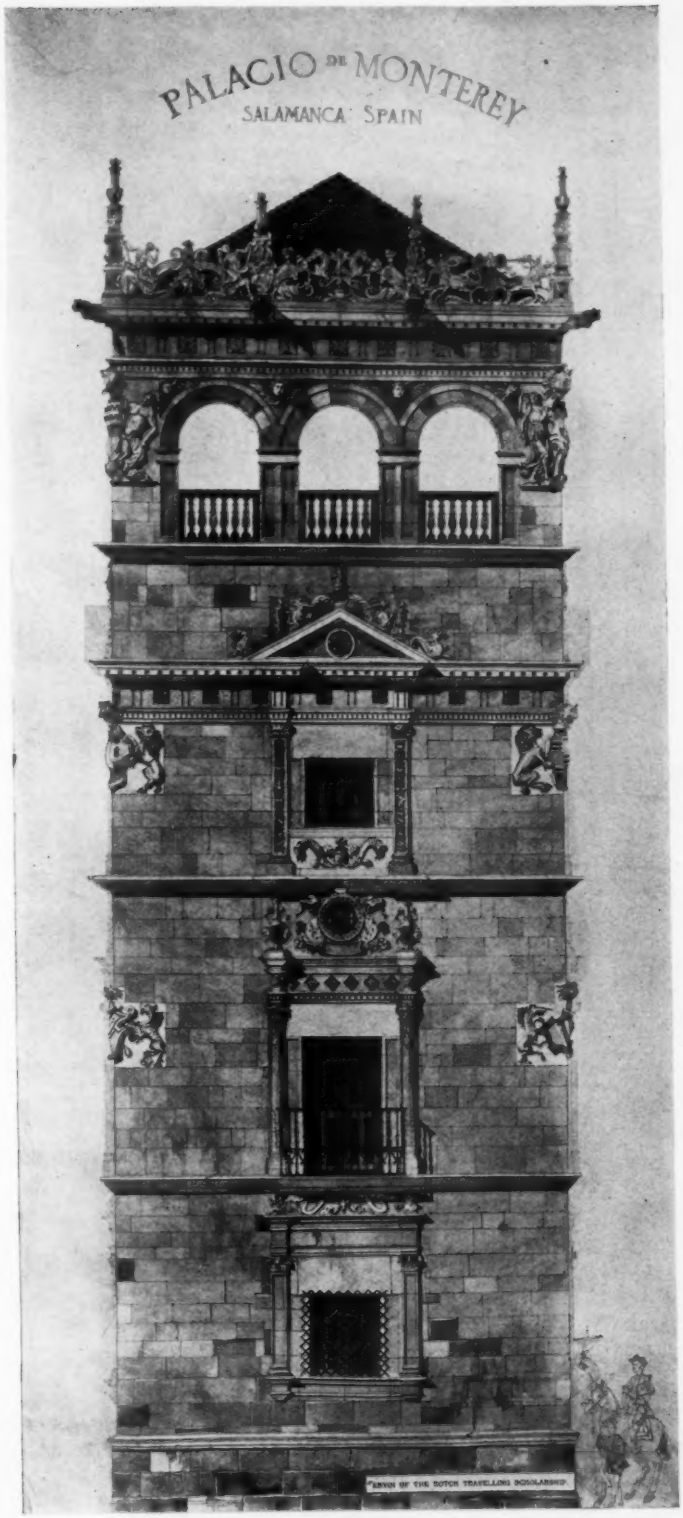
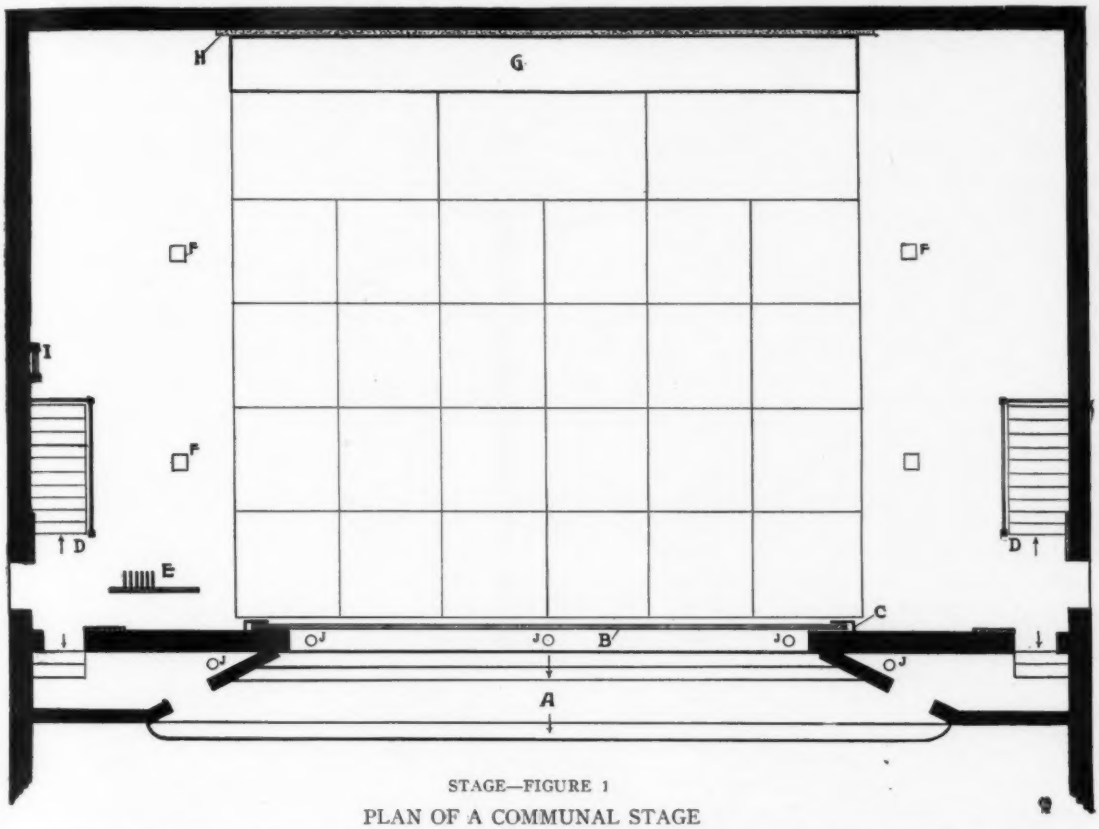


FROM A DRAWING BY JOSEPH McGINNISS

and calls for an auditorium 70 feet wide, the ratio being 1 to 2. For such a proscenium a 28-foot height is excessive and might be well cut to 21 feet, or even to 14 feet, thereby obviating the necessity for the use of a large *grand drape,* and permitting a reduction in the height of the flies. Commercial stages in America are, as a rule, too shallow, and the depth suggested in the table should be increased from 28 feet to 42 feet, to provide the distance required for atmospheric effects. In nothing less. The costly and illogical custom of placing so-called "dressing-rooms" or "green-rooms" in the space proper to the wings should be abandoned. These cubicles are too public for robing, too small for scene-docks and about as useful as an inflamed vermiform appendix.

Walls

Stage walls must be of fireproof construction and need not be plastered. There should be no windows below the upper sight lines, and the service



STAGE—FIGURE 1

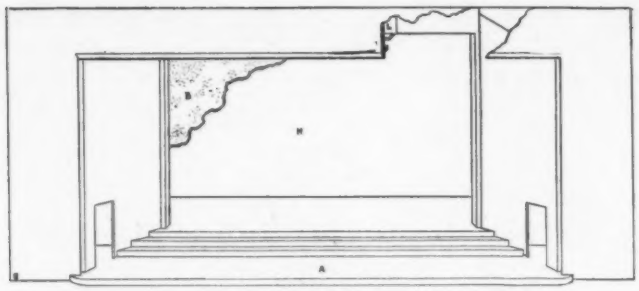
PLAN OF A COMMUNAL STAGE

a. Fore-stage; b. Fire curtain; c. Smoke groove; d. Stairs to cellar; e. Switch board and dimmers; f. Floor pockets for portable lighting equipment; g. Light pit; h. Horizont (cloth or plaster); i. Ladder to gridiron; j. Outlets for footlights and fore-stage floods (flush with floor)

Fore-stage and steps may be of polished hardwood. Stage floor, soft wood, sectional to permit easy removal. The area outside the fire wall (fore-stage, steps and rooms) is particularly useful for the production of masques and pageants, and for novelty prologues and interludes in connection with plays

no case should the depth of the stage be less than the width of the proscenium opening, and when possible it should exceed that dimension.

The importance of ample off stage space in *wings* and *flies* can not be over emphasized. Neglect of this essential is the cardinal crime of school and community auditorium designers. The width of the stage should be the width of the auditorium, doors (side walls, right and left) should be located close to the proscenium wall. These doors should give easy access to the interior and exterior of the building so that players and mechanics will not be compelled to pass through the auditorium. All openings must be fitted with metal coverings. In the case of the proscenium opening, protection against fire is furnished by a curtain (asbestos or



STAGE—FIGURE 3

a. Fore-stage; b. Fire curtain; h. Horizont; l. Proscenium hood.

sheet metal over a steel or iron frame), suspended from steel cables, and moving in snug metal *smoke-grooves* which are set not less than eighteen inches to right and left of the arch. The curtain may be counter-weighted and operated by means of a hand-line, but the use of an electric winch is to be preferred.[4] Radiators, pipe lines, etc., should be bracketed high enough on the side walls to permit the stacking of scenery.

Floor

The stage floor is level and of pine or other soft wood; the *screw-pegs* required to fasten scenery and *stage-braces* can not be used in maple or oak. It is a good plan to build the floor in easily handled, movable sections to provide for the use of *traps* called for in the action of certain plays.[5] Where space for the storage of scenery, properties and portable equipment is not available on the stage level, the floor girders can be located to permit such materials to be lowered into the cellarage. Metal stairs to the stage cellar should be placed at the extreme right and left and as near the front as is practicable.

The stage floor should be about three feet above that of the auditorium floor, but may be somewhat higher when the latter has no pitch. The stage should not extend beyond the proscenium wall to form an *apron*. This construction is an unnecessary relic of the past.

A *light-pit* should be provided close to and parallel with the rear wall. It is a kind of trench, 3 to 4 feet wide, 3 feet deep and slightly longer than the width of the central *playing stage*.[6]

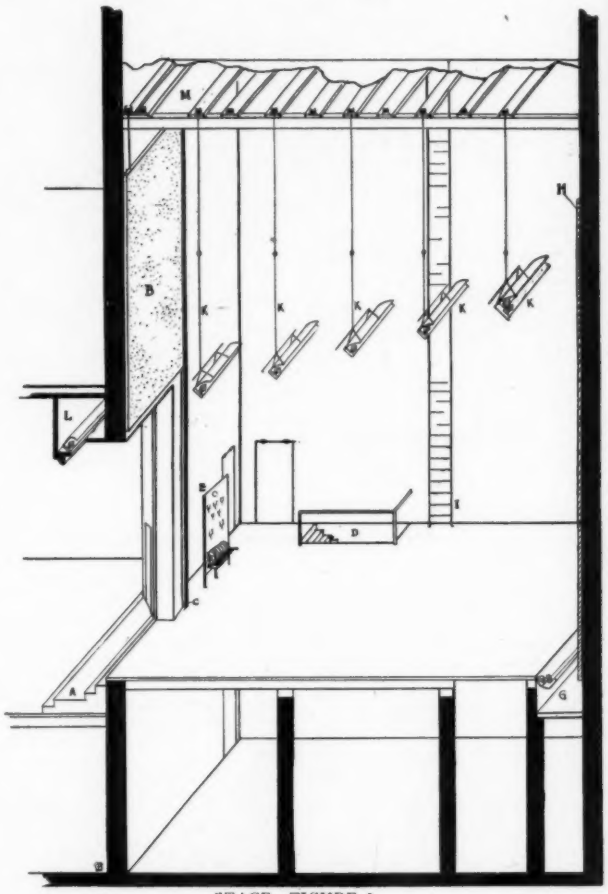
[4] *For detailed specifications, see "Theatres & Picture Houses"—Meloy, p. 31.*

[5] *Examples—Hamlet, Act V, Scene I. Strindberg's "Kronbruden," 6th Scene. Kamban's "Hadda Padda," Act IV.*

[6] *Purpose of light pit is explained under "illumination."*

Flies & Loft

The *rigging loft* or *gridiron* is a skeletal platform located above the stage floor at a height equal to twice the height of the proscenium arch plus from 5 to 8 feet. There should be sufficient head-room between it and the stage roof to permit adjustment of its blocks and sheaves over which pass the lines from which scenery is hung. In commercial theatres and in the more pretentious art-theatres, the power arms of these lines are lashed to *pin-rails* situated on the *fly-galleries* which run along the side walls. The modest stage of the school or community building does not need these galleries and may have its pin-rails bolted to the side walls at a convenient height.



STAGE—FIGURE 2.

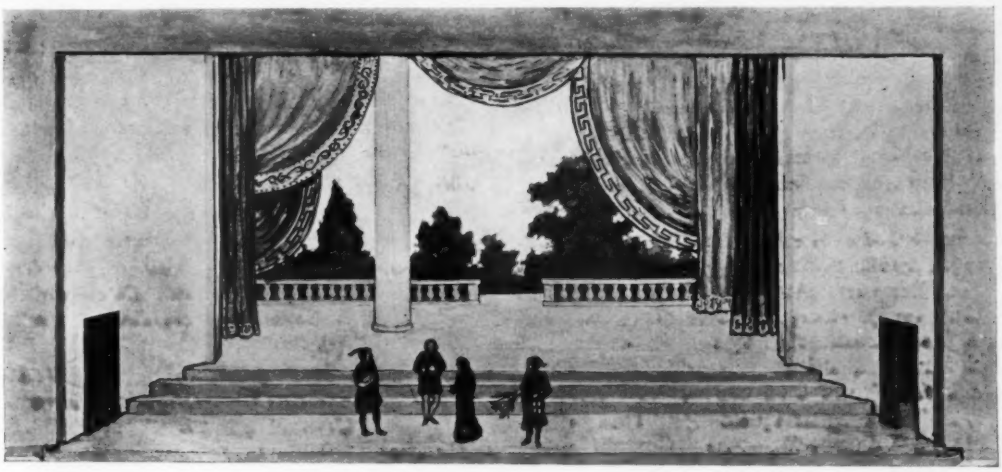
SECTION OF COMMUNAL STAGE

a. Fore-stage; b. Fire curtain; c. Smoke groove; d. Stairs to cellar; e. Switchboard and dimmers; g. Light pit; h. Horizont; i. Ladder to gridiron; k. Border lights; l. Proscenium hood; m. Rigging loft (gridiron).

The roof should be provided with sky-lights, ventilators and automatic sprinkler system.[7] A steel ladder rises from the stage floor to the gridiron.

Auxiliary Rooms.

Special dressing-rooms, baths, wardrobe and property rooms, paint and carpenter shops are out of the question in the majority of communal buildings, but at least one room for the storage of scenery, properties, costumes and electrical supplies should be provided near or under the stage. The players can use the gymnasium, bath house, class rooms etc. as temporary dressing-rooms, provided that they do not have to traverse a main public corridor or the auditorium in order to gain the stage. In schools or settlements which have manual training departments, the matter of a workshop is not a problem, and in other buildings the basement may be used for the construction of scenery and props. Painting is usually done on the stage proper.



STAGE—FIGURE 3 A.
FORE-STAGE AS USED FOR PROLOGUE

Illumination

THE traditional theatre got its effects by the use of elaborately built and painted scenery which was either palpably artificial or too physically naturalistic to be psychologically and artistically true. The art-stage avoids such costly trappings and creates in their stead an *inscenierung* which is economical, plastic, appropriate and, in the best sense, realistic. By the carefully studied application of light to planes and solids (simple scenery in the round, screens, hangings etc., arranged with nice attention to composition, design and chiaroscuro) it succeeds in creating an illusion which contents and convinces. With a few yards of fabric, a stick or two, a flat blue *drop*, and a few colored lamps *in resistance*[8], art-stage craftsmen like Maurice Browne or Sam Hume will make you a stage picture infinitely more interesting, veracious and soul-satisfying than the most costly spectacle of Sir Herbert Beerbohm Tree or the most extravagant production of the meticulous Belasco. Of all the mechanical forces at the producer's command, lighting is easily the most important, and it is the business of the architect to provide the stages which he designs with the equipment essential to an efficient use of this most facile and subtle instrument. The equipment should include: *borders, pit-trough, floor pockets, proscenium hood* and, if desired, *foot lights,* all controlled from a central switchboard and furnished with proper *resistance*[8].

Borders are galvanized iron troughs, suspended from the gridiron in adjustable cradles and provided with lamps (wired in three circuits[9]) and trained to cast light downward and backward upon the stage. They are hung parallel to the curtain line at intervals of 7 feet and are somewhat longer than the width of the proscenium arch. The border trough nearest to the rear wall should have a double row of lamps. A duplicate of this member (trained to cast light upward and backward) is placed in the

[7] *For details, see Rules of Nat'l Board of Fire Underwriters.*

[8] *Dimmers, which see.*

[9] *For 3 colors, white, amber and blue. Lamps, 60 watt tungsten, set 4 to running foot in single row border.*

light pit, the two being used to produce the illustion of *plein air* and distance by the reflection of their light from a tightly stretched cloth of white or blue[10] which is hung against the rear wall.

The proscenium hood is a double border (or a row of unit lamps), trained to light the front of the stage, and concealed from the audience by an architectural feature, located at the top of the proscenium opening and on the auditorium side of the proscenium wall.

Foot lights are largely *passé* on the art stage, but if desired, they should be of the disappearing type. A portable trough (molded to harmonize with the trim of the arch) which may be laid upon the stage when needed, is more serviceable and less costly to maintain than a permanent installation.

Floor pockets of approved design should be placed off-stage to right and left. Portable lighting equipment (such as flood and baby spot lights) and the lines required in the setting of a scene (fires, table lamps, etc.) are plugged into these pockets as required. There is no need for arc pockets as the powerful nitrogen bulb can be used in *spots* instead of the old-time arc lamp.

A switch-board of dead face type is situated off-stage right, parallel with and about three feet from the proscenium wall. All circuits of the stage and auditorium except emergency ones (i. e., exit and safety lights) are controlled by a master-switch and sub switches arranged in gangs on this board. Close at hand is the *dimmer bank* made up of a series of resistance plates actuated by individual levers and a master lever. Without dimmers good stage lighting is utterly impossible, since the adjustment of intensities and the mixing of colors depends upon them. Each dimmer plate must have 80 or more steps (gradations of resistance); a smaller number causes the lights to "jump" unpleasantly and prevents the gradual realistic progression from darkness to day or the reverse. There should be at least one dimmer plate for each of the three colors used, one or two for portable lights, and one for the auditorium.

Scenery.

While scenery is hardly within the province of the architect, it may be that he will find himself compelled to provide or suggest it in sheer self-defense, since the whole effect of his labors may be ruined by the gaudy stage dress provided by the unrestrained genius of the local scenic studio. In such event he will, of course, consult with a competent art-stage technician and be guided by his suggestions. A *multiple* or *permanent* setting, such as that designed by Sam Hume for the Arts and Crafts Theatre of Detroit might prove to be one useful solution of the problem. In any event, the architect should see that the large *horizont* or back-drop is properly installed and that one or two sets of draperies are provided for backgrounds in non-dramatic performances such as lectures and concerts. He should also arrange for the proper mechanical fixtures on the fabric curtain (*act drop*) which hangs just inside the proscenium (fire) curtain.

The writer regrets the necessarily fragmentary and sketchy character of these papers, but trusts that they may be of some little service to architects and others interested in the design of communal buildings. A brief bibliography of useful and suggestive books and articles upon the subject is appended to this article.

[10]. *This cloth is variously known as sky-sheet, cyclorama, horizont, back-drop, etc. See Moderwell's "Theatre of Today", Chap. VI.*

BIBLIOGRAPHY

Some books of value to designers of communal stages.

Adler, Hazel H. The New Interior. *Century Co. N. Y., 1917. Suggestive discussion of auditoria for art-theatres.*

Anonymous. The Truth About the Theatre. *Stewart & Kidd, Cincinnati, 1918. Indictment of commercial theatre in America.*

Atkinson, Frank H. Scene Painting. *F. J. Drake & Co., Chicago, 1916. "Commercial" Use with great caution.*

Bakshy, Alexander. The Path of the Modern Russian Stage, *Cecil, Palmer & Hayward, London.*

Beegle & Crawford. Community Drama & Pageantry. *Yale Press, 1916.*

Bragdon, Claude. Projective Ornament. *Manas Press, Rochester, 1917. Lighting in stage decoration.*

Burleigh, Louise. The Community Theatre. *Little, Brown & Co. Boston, 1917.*

Carter, Huntley. The Theatre of Max Reinhardt. *Mitchell Kennerley, N. Y., 1917. Much valuable information on structure and equipment of European Theatres.*

Clark, Barrett H. How to Produce Amateur Plays, *Little, Brown & Co., Boston, 1917. Excellent elementary treatise.*

Craig, Gordon. On the Art of the Theatre
Toward a New Theatre
The Theatre Advancing. *Little, Brown & Co. Boston. Craig is the great pioneer of the art-theatre.*

Cheney, Sheldon. The New Movement in the Theatre. *Mitchell Kennerley, 1914.* The Art Theatre, *Knopf, N. Y., 1917. Very good. Second only to Moderwell's "Theatre of Today".*

Chubb, Percival. Festivals & Plays. *Harper & Bros., N. Y., 1912.*

Eaton, Walter P. Acting and the New Stagecraft. *Theatre Arts Magazine, pp. 9-12, Nov., 1916.*

Hunt, Elizabeth R. The Play of Today. *John Lane Co., N. Y., 1913.*

Kinsila, Edw. B. Modern Theatre Construction. *Moving Picture World Co. N. Y. Equipment & Lighting. Use with caution.*

Krows, Arthur E. Play Producing in America. *Henry Holt & Co., 1916. Much useful information badly arranged.*

Matthews, Brander. A Book About the Theatre. *Chas. Scribner's Sons, N. Y., 1916. Historical, curious, euphoric.*

Meloy, Arthur S. Theatres & Picture Houses. *Architects' Supply & Pub. Co., 1916. "Commercial" Use with caution.*

**Moderwell, Hiram Kelly. The Theatre of Today. *John Lane Co., N. Y., 1914. Easily the best work in English covering the whole field of modern drama and its technique of presentation.*

Pichel, Irving. Stage Construction for Small Theatres. *Theatre Arts Mag., pp. 24-40, Jan., 1920. This article should be in the files of all architects of communal buildings. Up-to-date and practical.*

Rolland, Romain. The People's Theatre. *Henry Holt, N. Y., 1918.*

Sabine, Wallace C. Theatre Acoustics. *American Architect, Dec. 31, 1913.*

Taylor, Emerson. Practical Stage Directing for Amateurs. *E. P. Dutton, N. Y., 1916.*

Withington, Robert. English Pageantry. *Harvard Press, Cambridge, 1916.*

An Indigenous Architecture

By GEORGE W. MAHER, *F.A.I.A.*

THE articles that have appeared in the Illinois Society Monthly Bulletin have suggested that no movement of any permanent importance can evolve and properly mature unless founded upon certain fundamental principles related to environment surrounding life and progress.

"The Chicago School" or "Movement," as well as other distinct Chicago achievements, received its original impetus from the adventurous spirit of the early pioneer. The "I will" spirit of this great metropolis of the west is indigenous; it is a Chicago product of energy inherited from the early struggle for existence, a power that is generally known and given full recognition.

The upbuilding of Chicago after the great fire was one of the first evidences of this indomitable spirit. Although the heart of the city was stricken and complete cessation of business life was occasioned, yet a new and greater city arose from the ashes of the old with remarkable rapidity and of permanent character so that in a very short space of time the city was normal in its life. These evidences of vital, unconquerable will challenged the admiration of the entire country and the world. As another evidence of the "I will" spirit of this great metropolis attention may be directed to perhaps the greatest effort that has ever been performed by any city in the world embodying the complete powers of visualization, organization, construction and art, weaving them together in a masterly manner into the greatest exposition that has been erected by man.

The World's Columbian Exposition was the artistic triumph of the age and has been given due recognition. It is not my purpose to call special attention to these accomplishments but to endeavor to bring to the mind the force of the statement that I have suggested in regard to this progressive creative spirit of Chicago which dates from its birth.

"THE CHICAGO SCHOOL" of building was first expressed in a noteworthy way at the World's Columbian Exposition. This effort was the creation of the Transportation Building by Louis H. Sullivan, the architect. Here was an expression in art and architecture entirely new. The attention and interest of the traveler from abroad in viewing this art product of the great Fair was immediately challenged; here was evidence of progress in architecture.

This building was, perhaps, the most remarkable in the splendid group of edifices. It not only expressed in plan, design and ornament the purpose for which it was constructed, but also brought to the minds of those who visited the great Fair a new vision of the possibilities of the use of materials,

construction, art and architecture blended together in an original creation.

This building was prompted by the spirit of the west, and therefore indigenous, being related by inception and execution to this locality.

This splendid conception should be resurrected and replaced again in all of its original glory of design, of color and art for the purpose of accommodating great national gatherings and impressing them with the possibilities of American creative genius.

"The Chicago School" in design was, therefore, as auspicious in its beginning as that of any art movement in any country and no doubt was the inspiration that encouraged other minds to seek a new expression in their work. It, therefore, can be stated that "The Chicago School" dates its outward expression of note in the year 1893. It has progressed consistently from this time, ever growing in importance as recruits of independent minds have added their interest and influence to the movement. The work of this widening group of men has not been of an organized nature, nor do the examples of the work of each correspond in general theme. There have not been as yet any text books written or any art or architectural schools or lecture courses instituted to stimulate the interest of the student in this particular creative work. There are few professors as yet who are qualified to crystallize into practice this expression of an indigenous art. It is recognized by the men who constitute this group that no one should presume to design in creative work who is not well grounded in the theory of precedent architecture, also a knowledge of the historic art of the great past, since no art movement of forward tendency can be adequately evolved that is not founded upon the spirit of past achievement.

It is, however, very evident in the work of this group of architects that progress must not be hindered by precedent no matter what the sacrifice may entail. That environment and the life of a people must be considered first in all of its phases of development and that this inspiration be given full expression.

"The Chicago School" as one of its principles recognizes the engineering features of building as being of importance and that the great themes of modern construction be emphasized in all of their daring, soaring grandeur not concealed or camouflaged by conventional methods of design of another age but that the masonry, steel or concrete be properly clothed and embellished with original features and ornament inspired by a knowledge of the needs of the situation. Bountiful nature is drawn upon to beautify and ennoble the varied structural forms thus taking inspiration directly from that which springs from the soil.

THE special room at the Annual Exhibition of the Chicago Architectural Exhibit held at the Art Institute of Chicago April 6th to May 5th, 1920, displays the work of this school and the extent of its wide and varied influence. This exhibit includes all types of work from the smallest hamlet to the great modern public building; homes, office buildings, bank buildings, gymnasiums, pavilions, theatres and college buildings, churches, town planning, landscape work, sculpture, modeling, stained glass, decorations and general designs.

This exhibit perhaps displays a broader range of effort in plan and design than any exhibit held in Chicago or elsewhere. In studying the exhibit it is interesting to note the openness and freedom of mind that seems to prevail and possess the respective architect in the solution of his problem and the directness with which he meets the situation, whether it be a residence, bank, theatre or great public building. The respective groups are as individual and free as the term indigenous implies, each architect working out his particular problem without fear or the thought of praise or blame, ever influenced by the spirit of right, pride of country and the reverence for our common art. No greater educational propaganda could be suggested than that this entire exhibit be forwarded to various parts of the country where it may be viewed and explained to the general public.

The principles underlying this work are akin to the ideals of America and represent in a tangible way the spirit of a democracy, working through the minds of the men who have created this work.

These examples are indigenous since they spring from the soil and the people.

Current News

Happenings and Comment in the Fields of Architecture and the Allied Arts

Building Material Still Remains a Non-Essential

(By Special Correspondence to THE AMERICAN ARCHITECT)

CHICAGO:—The National Federation of Construction Industries, including material men, contractors, architects, engineers, bankers and representatives of all lines of construction work, at the first annual meeting held at the Hotel Sherman, adopted resolutions calling upon the railroads of the country to remove the "non-essential" classification from building material and allow the nation to overcome the present housing shortage.

Speakers at the meeting pointed out that the shortage in homes as well as in commercial structures is due to a large extent to transportation restrictions and inability of builders to get materials moved over the railways. The demand was voiced that building materials be placed on the preferred list for transportation, the same as food products. It was explained that a crisis in building faces the nation.

Building Conditions in Salvador

Not only school buildings but cheap houses for workmen are much needed in Salvador. Public-spirited men of wealth are putting up improved dwellings for the working classes and the Government plans to co-operate in work of this character and to repair the more important buildings damaged by the earthquake.

Studies and experiments in the construction of earthquake-proof buildings have naturally resulted from the not-infrequent damage or destruction of Salvadorean cities and villages by the eruption of volcanoes. An architect in San Salvador supplies the following observations on this subject:

"San Salvador, like all Latin American cities, was originally constructed after the Spanish colonial type, the buildings having heavy stone walls formed of stones and clay taken from river beds and other stony places. Lime was little used on account of the difficulty of procuring it from the only deposits, near Metapan in the Department of Santa Ana.

"In March, 1893, repeated earthquakes almost destroyed the capital, leaving only a few structures standing, among these the cathedral, a bank building, the national palace, and a few small buildings in which lime had been used in the walls. Many of the residents of the capital rebuilt their homes on higher ground, and this resulted in the growth of the suburb of New San Salvador or Santa Tecla. However, many other inhabitants remained in the capital, rebuilding their homes according to a construction system called the "bajareque," which has proved to be practically earthquake proof. This system consists of a framework of hardwood (of which there is an abundance in the country), plastered with mud or clay; most of the buildings are one story."

In November, 1899, the national palace was completely destroyed by fire, and five years later a new palace was begun, which was finished in 1914. Its framework of iron and steel filled in with brick masonry was made in Belgium, and technical contractors from Europe came to direct the construction. It is now the finest building in the country. The national theatre was rebuilt a few years ago of reinforced cement, the building being artistic and satisfactory in every way.

An Italian architect introduced in Salvador a system of metal framework of beams and columns, filled in with hollow cement blocks. The School of Medicine is built on this plan, as are several other structures. Many buildings are of reinforced or trussed concrete construction, the materials having been imported chiefly from the United States. There is not a large market for lumber in Salvador as local timber fills most needs and is moderately priced. The lumber principally in demand is roof timber, heavy posts and flooring, the latter generally of cedar or other hardwood.

Housing Problem Acute in Berlin

The territory which Germany has surrendered to Poland under the terms of the Versailles treaty is dumping thousands of homeless fugitives into already overcrowded Berlin, according to Dr. W. Laporte, municipal housing commissioner.

"Investigation has shown that in a single house seventy-nine persons were fugitives from Polish Germany. There are approximately 32,000 families seeking homes in Berlin. We have today only 320 apartments at our disposal," said Dr. Laporte.

The Berlin housing commission has proposed the immediate construction of 5,000 two-room apartments or huts to accommodate the families who are now exposed to disease, sleeping in cellars.

Glasgow Foresaw Housing Shortage and Planned Ahead

The city of Glasgow tackled the housing problem long before it was made acute in Great Britain, America and France as a result of the war.

In fact, Glasgow started fifty years ago to tear down the old rookeries, put up new buildings and construct wider and better streets at a total cost of $8,500,000.

A beginning was made by the erection of two model tenements and seven model lodging houses, six for men and one for women. The city put up stone buildings of from three to five stories in height. In each there is a large dining hall and abundant kitchen facilities. There is in each a big recreation room.

The seven lodging places can accommodate 2,235 persons. The charges vary from 8 to 12 cents a night.

An innovation was the erection of a "family home" in which rooms are let to workmen with motherless children. Servants look after the children while the father is away at work and see that those of school age go to school. The children are boarded for about 45 cents a

week. The room for the man and his family costs $1.10 per week. Children beyond the number of three are given beds in the dormitory at an extra cost of 16 cents a week. The last reports showed that 122 men and 146 children were living in this home.

In all, the city has provided homes for 2,199 families. Apartments are rented by the city from $25 to $75 per annum to workingmen.

The city's manager for this property is W. C. Menzies, who in his younger days emigrated to America and worked for a time on public buildings in Cleveland. Later he worked on suburban residences in Cincinnati and Covington and later still in Chicago.

Difficulties Encountered by Chicago Contractors

That the lack of transportation facilities and service are strangling building activities in many of the larger cities is typified in the experience of Chicago. The following quotation from the monthly *Bulletin* of The Illinois Society of Architects suggests some of the handicaps confronting the construction industry in the metropolis on Lake Michigan:

"Unless some way is speedily found to induce the railroads to handle construction materials building work will shortly cease.

"For several weeks Chicago contractors completing time jobs have been compelled to rely on auto truck deliveries almost exclusively, hauling cement from Gary, brick from Rogers Park, cement and sand from anywhere, paying in some cases as much as $5 per yard for sand, $3.50 for stone and $3.45 for cement.

"Material dealers are refusing contracts for future deliveries. Contractors, therefore, do not know at the time of signing a contract what they may be compelled to later pay for some of the basic building materials. This state of affairs is reflected in recent contractors' bids which architects are noting are considerably higher than they were even thirty or sixty days ago.

"The uncertainty of the labor market is another factor causing careful bidders to play safe. The prospects are that in order to secure labor contractors will soon be paying a bonus to all branches of building trades. The factor, when added to the fact of the inevitable increase in the cost of materials which will come from a demand many times that of supply, will very soon make the completion of any project one of uncertainty, and the architect who will be able to secure the completion of any important structure within a time limit of three times that of pre-war conditions, or at apparently 300 per cent of pre-war costs, will be considered an organization genius. Building costs are advancing and will continue to advance for at least two or three years more."

Germany Compelled to Refuse $5,000,000 for Art

An offer of $5,000,000 has been made by an American to the German Government for sections of the famous altar piece painted by Jan and Hubert Van Eyck, formerly in the Cathedral of St. Bavon, Ghent, and now in the Berlin Museum, says the *Tageblatt*.

It is said the Government cannot accept the offer, as the treasure must be returned to Belgium, under the terms of the Versailles treaty.

Germany, however, must pay the Hohenzollern family for this work of art as a part of the settlement for the taking over of royal holdings, the newspaper says.

Texas to Have State-wide Campaign for Civic Beauty

A State-wide campaign for civic beauty has been started by Mrs. A. H. Abernathy, State chairman of civic art of the State Federation of Women's Clubs. She has issued the following proclamation:

"All club women and all others who really love Texas and care for its best development," she says, "are urged so to make their plans that they can help in an intensified campaign during the month of May to wake up every town in the State to the need of beautifying the community.

"In our national unity of purpose toward the true Americanization of all our people we find civic art taking its own place. National, State and city governments are coming to realize more keenly the value of beautiful communities. The more progressive towns of any size foster one or more civic improvement associations, each founded in the belief that restlessness and depression of spirit are aggravated by unpleasant surroundings, while beautiful cities make for happy, hopeful, ambitious and active citizens."

To every club or organization which consents to take part in the campaign is to be sent a plan of work as follows:

"Personnel of the director and co-workers of the campaign. It is important that the director and her chairmen of committees shall have a clear vision of what should be done; shall have patience, tact and a sense of humor; shall be willing to work, and shall be willing to subordinate personal opinions for the general good.

"Selection or appointment of a director in each town, and the appointment of the following committees:

"1. An ordinance prohibiting disfiguring signs and billboards, and its enforcement.

"2. Shade tree and shrub commission.

"3. Commission for general beautification of the community.

"4. Publicity, slogans, posters and other attractive means of getting the spirit of the campaign before the public.

"5. To devise ways and means for one or more trained speakers during the month of May.

"6. To conduct lantern slides exhibiting examples of civic beauty and public eyesores.

"7. To conduct an essay competition among high school pupils, the best one published.

"8. The most beautiful home and grounds contest.

"9. The most useful and orderly backyard contest.

"10. Parks and recreation facilities.

"11. Public buildings.

"12. Streets and highways.

"13. To stimulate the discussion of the following civic art needs in Texas, to further information about them and to work toward their ultimate accomplishment: A State art commission, a commission for civic art beautification in every community where there is a federated club, school civic art leagues, and the postponement of the erection of memorials until there are art commissions in Texas.

"14. To get reports from each committee of the plans for work, and send to the district chairman of civic art by May 10, and to make to the district chairman by June 10 a full report of all work accomplished in the campaign.

"Understanding of the primary objective and of the ultimate objective.

"Study of methods to be used in campaign.

"Importance of follow-up work of the director.

"May we not in such work heed Ruskin's warning that it is not beauty which is expensive but ugliness which costs?"

Profitable Use of Farm Woodlands

The forest lands held by farmers in the Southern States constitute a total of about 124,000,000 acres, which is more than one-third of all the farm lands in that section, says a recent *Farmer's Bulletin* of the Department of Agriculture. "It may surprise some to know that farm woodlands represent more than one-half of the entire forest land in the Southern States, including the great holdings of the lumber companies, and yield annually about $94,000,000 worth of timber products. Of this amount nearly one-half is sold in the form of logs, other cut products, and as standing timber. The remainder is used on the farm."

To make farming pay better by showing the way to the more profitable marketing of farm timber is one of the principal objects of farm forestry. Some owners use timber that ought to be sold, while others sell timber that ought to be used on the farm The foremost purpose of woodlands is to supply firewood, posts, rails, poles and rough building lumber for the maintenance and improvement of the farm. Millions of young pines which have been shaded out and have gone to waste in old field stands would have made fence posts and given ten to twenty years of service if they had been properly treated with creosote; on the other hand, choice white-oak butts have been seen being made into fence posts because they "worked easily," notwithstanding the fact that less than a mile away there was a sawmill which wanted such logs for quarter sawing at $40 per 1,000 feet.

Small-sized trees are being cut for ties, poles and cordwood which should be left for additional growth and entire woodlands which contain considerable choice timber, much more valuable for lumber, have been cut clean for nothing but ties.

High grade logs of white oak, yellow poplar, red gum, ash, cherry, black walnut, etc., says this bulletin, can in most cases be sold in carload lots direct to the manufacturing plants, even though these are located considerable distances away.

Steep slopes, poor soil, rocky land, unused corners, gullied land and wet land afford places for growing timber profitably, these various classes of so-called waste land being as a rule better adapted for forest production than for any other use. Tree planting over gullies checks erosion and not only results in profit from the foresting, but protects valuable farm land.

A Health Cabinet

West Virginia has formed a health cabinet for the State, including the commissioner of health, the superintendent of schools, the sanitary engineer, the director of nursing service, the supervisor of rural schools, the director of the farm bureaus and a representative of the Red Cross. The cabinet has decided to focus its attention on one county in the State at a time, and to make a demonstration in it over a period of three months. Representatives of different kinds of social work—ten or twenty of them—will be sent into the county. An attempt will be made to examine every school child and most of the adults, to hold nutrition clinics, and so on.

Housing Plans in Chicago

(By Special Correspondence to THE AMERICAN ARCHITECT)

CHICAGO:—Various civic and commercial organizations of Chicago are hard at work on plans to speedily reduce the city's shortage of 50,000 homes. Of these the Chicago Housing Association announced through its leaders, Benjamin J. Rosenthal and Herman H. Hettler, that 8,000 houses to cost in the neighborhood of $2,500 each would be constructed this Spring and Summer.

It is planned to allow tenants to pay for the new homes at the rate of $19 a month for twelve years. For outlays said to be less than the cheapest rent, 8,000 Chicagoans will have five-room standardized frame houses with modern conveniences and yards large enough for gardening.

This is the first formulated and unconditional promise made by a Chicago civic body to help solve the city's shortage of homes.

The Chicago Realty Board has appointed a committee of experts and business men to decide what type of dwelling will give the quickest relief. After a report by the committee the building program of the organization will be definitely determined.

The speeding up of construction, however, is not the only phase of home building to be considered by Chicago organizations in the opinion of Julius Rosenwald, president of Sears, Roebuck & Co. Mr. Rosenwald declared it to be the duty of the city's industrial and commercial leaders to get together for the formation of a syndicate to finance workers desirous of building homes.

"Conditions are appalling," said Mr. Rosenwald. "Of this there can be no doubt. One of our civic organizations or some of our leaders adapted to this work should rise to the occasion and make a campaign for the required amount of money. It should not be difficult to get finances for a project like this whether the amount be $1,000,000 or $5,000,000, or more."

Mr. Rosenwald advocated the adoption in many of its elements of the Detroit plan. Just as the plan is in Detroit, Mr. Rosenwald would have his proposed financing syndicate lend the prospective home owner enough money to finance building a home, without being required to pay exorbitant rates for a second mortgage or for a loan made on a note. To start building the owner must have approximately 20 per cent of the cost of the home.

Stanford White's House Bought by Y. W. C. A.

The former residence of Stanford White on Lexington Avenue and Twenty-first Street, New York, has been sold to the Young Women's Christian Association.

It consists of a five-story structure, with a two-story addition, occupying a plot with a frontage of 58 feet on Twenty-first Street and 131 feet on Lexington Avenue. After Stanford White's occupancy the building was extensively altered, and it became the home of the Princeton Club, which later gave it up and took quarters in the Yale Club.

In the rear of the property just sold is the building which houses the activities of the Russell Sage Foundation, which covers the balance of the block on Lexington Avenue.

It is understood that the association is to use the present buildings, which are connected, for the International Institute for Young Women. The building has a roof garden and a large auditorium, besides a large number of dormitories.

Personals

M. E. Boyer, Jr., has opened an office for architectural practice at 505 Trust Building, Charlotte, N. C., and desires catalogues and samples.

Ralph Mornington Weinrichter, F. A. S. L. A., landscape architect, of Rochester, N. Y., announces the establishment of a New York office at 10 East 43d street.

Kirby T. Snyder, architect, formerly at 933 Plymouth Building, Minneapolis, has moved his offices to larger quarters at 738 and 739 Plymouth Building. He desires new catalogues and samples from material firms.

Kemper Nomland, formerly of New York and Los Angeles, has opened offices at No. 312 Southwest National Bank Building, Oklahoma City, Okla., for the general practice of architecture and desires catalogues and samples.

Architect Edwin H. Clark of Otis & Clark, 6 North Michigan avenue, Chicago, is to sever his connection with his partner on May 1 and will move across the river and occupy quarters in the remodeled residence at 8 East Huron street.

Fulton & Taylor and Paul T. Cahill desire to announce the formation of a new partnership, Fulton, Taylor & Cahill, architects, and the removal of their office after April 1, 1920, from 631 Hippodrome Building to 8120 Euclid avenue, Cleveland.

J. A. Lindstrand, for the past five years architect for the Bureau of Valuation, Interstate Commerce Commission, announces that he has severed his connection with the United States Government and has opened offices for the general practice of his profession at 800 North Clark street, Chicago, Ill.

Rayburn S. Webb, formerly of the firm of Parlow & Webb, architects, Capt Girardeau, Mo., announces the opening of an office for the general practice of architecture at Room 519, Himmelberger-Harrison Building, Cape Girardeau, Mo. Manufacturers' catalogues and samples are requested.

News From Various Sources

The British State-aid schemes have produced during the past fifteen months 246 houses. There is need for 500,000.

* * *

The members of the French labor unions are planning to tax themselves one franc each for the relief of their Austrian comrades.

* * *

Statistics Branch, General Staff, War Department, issues statement on the 1,200 landing fields for aircraft listed in United States.

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The note circulation of the United States was $1,056,000,000 in June, 1914; $3,643,000,000 in November, 1918, and $4,051,000,000 in December, 1919.

* * *

According to the *Automobile Trade Journal,* more than 7,623,551 automobiles were registered in the United States last year. Of these 87.14 per cent were passenger cars.

The number of motor vehicles registered in New York State in 1919 was 571,662, an increase of 107,904 over 1918 They yielded the State approximately $6,000,000 in fees.

* * *

The immigration through the Port of New York in 1919 reached a total of 168,025, of whom 47,034 came from Mediterranean ports. The immigration in 1918 was only 71,751.

* * *

The Legislature of New York has passed a bill, which has been approved by the city, changing the title of the Department of Public Charities to the Department of Public Welfare.

* * *

Second Annual Hotel Men's Show will be held at the Coliseum, Chicago, the week of May 10. Displays of the most up-to-date furnishings, equipment and labor-saving devices will be shown.

* * *

The 141 savings banks of New York State had resources of $2,456,993,719 on January 1, which was a gain of $225,531,791 during the year, and deposits of $2,267,395,799, an increase of $225,384,695.

* * *

The Department of Agriculture in Washington reports that the number of people engaged in farming in New York State decreased 3 per cent last year and that the number of farm laborers decreased more than 17 per cent.

* * *

Senate March 29 adopted committee amendment to post office appropriation bill providing for a transcontinental air mail route between New York and San Francisco by way of Chicago and Omaha and passed bill carrying total of $462,000,000.

* * *

Park Commissioner Francis D. Gallatin, of Manhattan, has announced that he will open two Municipal Flower Markets, one near the Maine Monument at Columbus Circle, and the other in Union Square, where florists may sell directly to the consumer.

* * *

Suggestions for utilizing the wooden-hulled ships, now lying idle in the Delaware River, and others expected later to relieve the housing congestion, are being discussed among Philadelphia real estate men, according to a recent news note of the Atlantic Coast Shipbuilders' Association.

* * *

Statistics recently compiled show building construction contracts let for first three months of 1920 in territory east of Missouri and north of Ohio rivers were $780,408,000, compared with $275,555,000 for first quarter of 1919. Normally first three months of year account of 20 per cent of year's total of work started.

* * *

U. S. National Museum at Washington issues statement calling attention to the fact that it contains many collections and exhibitions rich in interest and value for the designer working in textiles, costumes, arts and crafts, and in other phases of decorative art. States that economic value of museums in this respect is coming to be realized more and more by designs as demand increases for unique and unusual designs. In National Museum forms of decorative art shown cover geographically every part of globe, and in point of time from crude prehistoric beginnings of art down to present.

Weekly Review of Construction Field

Comment on General Conditions of Economics With Reports of Special Correspondents in Prominent Regional Centers

At the annual meeting of the United States Steel Corporation, April 19, Judge Gary, chairman of the board, discussed business and labor conditions. "It seems to us," he says, "the problem of high cost of living is of convincing importance. Therefore, it should be the effort of all to establish and maintain a reasonable basis of prices; certainly to prevent further increases, otherwise the Government, from the standpoint of protection of a part of the public, must interfere. Moreover, it is believed that in view of all the conditions prevailing the selling prices of most of the diversified products of the corporation, for the present at least, are high enough, though it is pertinent to say that when the actual value of the properties and volume of business of the corporation are considered the net return is at least moderate."

Referring to the large surplus of the corporation, he recalled the panic of 1907, when as a means of preventing further demoralization in financial circles the seventy-five or eighty million dollars which the corporation then had in cash, did valuable service. "We are not called upon to maintain cash for those purposes," he continued, "but in accordance with the principles of good management we should keep ourselves in a condition that will enable us to do all the business offered that we can handle, promptly and properly, without borrowing a dollar.

"We know pretty well what has happened in the past, we know what is happening now; but we cannot make an accurate prognosis for the future. Consequently we must be prepared so far as we can. There is now more or less social disturbance in this country. There has been a bold, deliberate, underhanded movement instituted by people who are not loyal to the principles of our Government. But they will not succeed, because 97 per cent of the people of this country are loyal. We are going to get through this because of conservatism, because of prudent management and the desire to economize. There is no excuse for lack of economy at the present time. There is no excuse for spending six and three-quarter billions of dollars a year for the management of the affairs of this Government.

"The people of the United States never had so good an opportunity for progress and prosperity as they have at the present time. In that respect conditions have been improving for the last year or more. We may take and maintain the leading position, industrially, financially, commercial, of all the nations of the world; we have the resources, which are natural and permanent, to occupy and maintain the position."

In speaking of labor conditions, Judge Gary opposed the "one big union" idea. He stated their position: "We acknowledge the natural right of labor to organize, but we insist that a labor organization should be subjected to governmental control and regulation like other organizations. Discrimination by law in favor of or against any particular class is detrimental to the interests of the community." He also does not accept the "shop committee plan" as being "no better or more satisfactory to the employes than our own"—but he adds that "a studious, thoughtful, fair-minded, intelligent general public is at present considering these vital questions."

A compilation of the resources of the national banks has shown a shrinkage of almost a billion dollars in the two months of January and February of this year. The total resources on February 28th were $21,862,540,000, which were, as compared with March 1st, 1919, an increase of $1,665,000,000. The chief cause of the reduction since January 1st has been the withdrawal of governmental deposits, which declined from $448,000,000 to $67,000,000. The distribution over the country of this reduction in deposits is $688,000,000 from New York, $12,000,000 from Chicago, $20,000,000 from St. Louis; Philadelphia, $72,000,000; San Francisco, $44,000,000; Boston, $33,000,000; Dallas, $30,000,000; Baltimore, $27,000,000, and Pittsburgh, $22,000,000.

Of the reserve cities, 24 showed increases in deposits and 31 showed decreases not exceeding $10,000,000 each way. The country national banks have shown a net increase in deposits during this period of shrinkage amounting to over $89,000,000.

The ratio of loans to deposits on February 28th, 1920, was 70.70 per cent, as compared with 65.97 per cent on December 31st, and 63.35 per cent on March 4, 1919.

In all business circles nowadays there is an undercurrent of talk of "panic" or "depression" or "shake-out" or "readjustment." The terms seem to be synonymous. Every now and then the stock exchanges think the moment has arrived, but the situation results in their finding out that some group has made a haul.

The Federal Reserve system is generally held to be an almost certain preventive of a money panic. Further, it is apparent to anyone that there is a large amount of work to be done. If there is a discovery of overproduction it will be at some remote time. We have not too much money tied up in empty dwelling houses, nor in railroad development.

Prices and wage schedules are high, compared with the past averages they are very high; but there is a question whether they will be reduced. Some leading economists say they will not. There is no reason for believing the buying power of a dollar in 1914 to be a criterion any more than its buying power in 1714.

At present the demand for goods and for labor is far in excess of the supply; it is natural to expect that when the balance is reduced there may naturally be some reduction in prices. Some wiseacres are sitting around patiently waiting for that time. Some others are increasing their makings while the making is good. Although it is only a minority, it is unfortunate that these men have so little confidence in the future and cannot see through their apprehension. Their practical advantage is to stabilize the present market by the production and delivery of actual goods.

(By Special Correspondence to THE AMERICAN ARCHITECT)

Chicago.—The arrest of the strike leaders by the Federal Government practically ended the railroad strike in the Chicago district, and a substantial increase in the movement of freight shows a situation rapidly becoming more nearly normal.

The steel industry was the hardest hit by the virtual

suspension of traffic, more than half of the steel mills in the district being shut down as a result of the strike.

While the steel situation continues depressing, the outlook of the construction industry is more promising, owing to the increased movement in building material. Recent reports by the railroads indicate a big tonnage of lumber and building material moved during the strike period. Lumber shipments show an increase of 26 per cent over those of the corresponding time a year ago.

The increased transportation of building material should tend to lighten the load carried by the construction industry, which continues to be hampered by labor and credit difficulties. The high interest rate of 7 per cent is generally in force. Banks are reported to be refusing loans on construction work—a tightening up of credit due to an already over-loaned condition, labor shortage and uncertainties. This attitude on the part of the banks appears to be coincident with the stand taken by many contractors, who are refusing bids on work that cannot be completed within a few weeks because of the uncertainty of labor after that time.

Building permits, however, continue to exceed all previous records, both in number and the cost of projected structures, but local economists assert that many permits have been taken out which will not be used for the present because of cost and uncertainty of completion.

Bond issues totalling $34,500,000 intended for better street lighting, building of bridges, improvement of parks, playgrounds and bathing beaches and a municipal convention hall were defeated by Chicago voters recently. It is believed that the thought of increased taxation, unprecedented construction costs and the diverting of labor and material from more pressing needs have influenced the voters in defeating the bonds.

(By Special Correspondence to THE AMERICAN ARCHITECT)

It is a question how much longer the prices of material will be able to hold up actual construction in San Francisco. The scarcity of desirable office space is daily becoming acute and a large number of buildings of this type is planned. Montgomery street is being especially favored in this respect. Insurance companies are advertising the immediate erection of two large buildings, one on the corner of Pine and the other on Busk street. Across the street from the latter the Crocker Estate has announced a fifteen-story building. Less than two blocks away the First National Bank is beginning the erection of a large addition to its building on the corner, and across the street the Wells-Fargo Nevada National Bank has bought the property adjoining its building, with the announced intention of building an addition. These buildings are assured and a number of others are projected upon which architects are making plans and estimates. The next five years will witness the complete remodeling of the sky line for the first four or five blocks along Montgomery.

So far as prices of materials are concerned, but few changes have occurred during the week. Reinforcing bars are in somewhat serious condition. The local mills depend entirely upon scrap as their raw material for steel bars, and steel scrap is made almost exclusively in the shipyards. This is becoming scarce and is held at higher prices, which in turn boosts the price of bars. It is noted that none of the changes in prices of material show a downward tendency.

While quotations are given on spruce, hemlock and yellow pine lath, it must be noted that these figures are purely nominal, as not enough of these varieties come to San Francisco to establish a market. Practically all the lath used here is of fir or white pine.

In the structural steel quotations for beams and channels the prices are "out of stock" figures in the case of these materials, the first figure being for beams and the second for channels.

(By Special Correspondence to THE AMERICAN ARCHITECT)

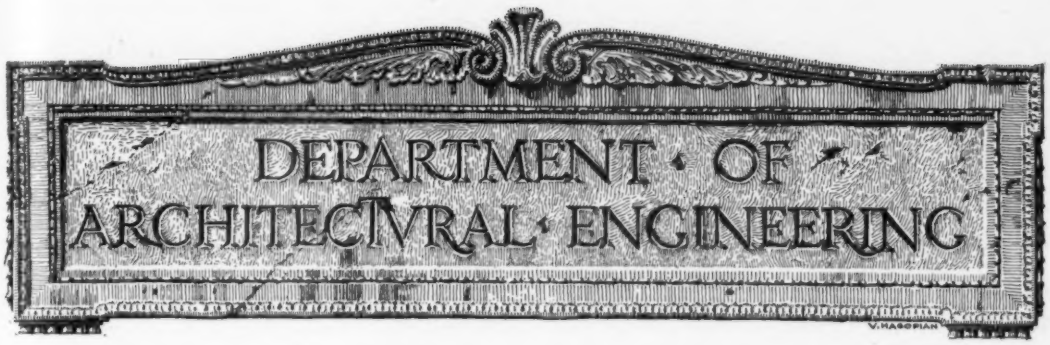
Seattle.—The railroad strike which compelled Eastern buyers who have fir lumber to resell, because of inability to get cars switched or unloaded was a a weakening factor in the tone of the fir lumber market this week, although quotations remained unchanged. Nails, steel pipe and plumbing fittings have advanced and Eastern mills report inability to cope with the situation. United States Steel mills are attempting to hold prices in line, but have little stock to offer, and purchases by North Coast jobbers from outside mills are at higher prices. Staple earthenware plumbing essentials are in fair supply, but brass goods are up 10 per cent and pedestal and wall-hanging bowls are almost unobtainable.

Cement advanced 25 cents per barrel to $4.50, with a rebate of 80 cents for bags. The lath market is weak and No. 1 standard lath are being delivered on the job at $10. Brick and plaster are steady. Plaster board is unchanged. There is no channel iron in the market and architects will be urged by jobbers and building contractors to find a substitute in North Coast building operations. Sidewalk lights are in brisk demand. More of these have been used in Seattle than ever before. Fire brick from British Columbia and face brick from other points of Western Canada is plentiful. Face brick is $65 delivered on the job.

Jobbers report an easing off in the demand for building materials. Under the conditions of delivery and price there is considerable discussion among contractors as to the cost plus basis of taking contracts, although this has not yet assumed definite form.

Jobbers began quoting nails 50 cents higher this week, in conformity with an advance to them by the mills, but even this gives no assurance of the approximate time when delivery conditions will improve. The Steel Corporation has not changed its quotations, but cannot satisfy jobbers as to the quantity they can supply, and when relief is sought with outside mills jobbers go into a higher market. There is no stable market in either nails or tubing. Steel bars are at a $4.25 base to jobbers, but neither the Pacific Coast nor Colorado mills can meet the demand. The local market is 25 cents higher. A horizontal advance of $5 to $10 on all building steel is being inaugurated here by the jobbing interests. Pipe is up two points under similar conditions to those of nails. The National Tube Corporation has refused to advance its prices, but is unable to deliver stock.

Fir lumber mills have assumed an independent attitude toward wholesale buyers and will not accept at bids offered. Reports from the East indicate that the Spring lumber demand is over and that there will be no buying from that direction until Fall.



Valuable Information on Building Materials Made Available Through Work of Trade Associations*

By Wharton Clay, *M. W. S. E.*

Commissioner, Associated Metal Lath Manufacturers

A TRADE ASSOCIATION is a voluntary organization of competitors such as manufacturers, jobbers or dealers, in the same general line of business. These competing interests join for material benefit. They are sometimes associations of men in the same line in different cities, as central stations, street railway operators, and others who manifestly are not in direct competition, but always commercial interests that have the same general problems of manufacture, development or sale to face. This type of association, however, does not include the usual Chamber of Commerce of a city, which would be made up of firms in varying lines of business, nor does it include professional or public societies, for instance, the American Society of Civil Engineers, the National Fire Protection Association or others whose membership is individual in nature.

Four hundred and fifty such associations were listed by the U. S. Bureau of Commerce in 1917, and hundreds more have developed within the past few years. Many industries in which no organization was in existence found themselves so widely divergent in types, styles and products that it was impossible for the United States Government to deal with them when war came upon us. In fact, the Government fostered the organization of competitors into trade associations; which, having now discharged their war duties, are continuing because they fill an economic need not only within the ranks of the industries themselves, but also in service to the general public. They will, henceforth, always be prepared to serve the country in times of peace or in times of war, insuring a speedier mobilization of industry than would be possible without them. They are able to co-operatively develop foreign markets or economically promote domestic consumption.

* * * *

The United States Bureau of Standards has prepared a report on standardization work in 102 trade associations co-operating with the Bureau, which has been made available, and a list of over 600 trade associations has been canvassed in the preparation of this paper. Information has been received from several score more than it will be possible, in the time allotted, to fully acknowledge. It is, therefore, with regret that the accomplishments of only a small number of associations which have done admirable work in engineering, can be described this evening.†

So great has the importance of association work in general become that the first building to be built after the war in New York City was the twenty-story National Association Building, especially designed to accommodate the many association headquarters centered in New York City.

The public at large, and even the engineers who deal more particularly in materials, may not realize the broadmindness of the manufacturers of the

* Abstract of paper read before the Western Society of Engineers.

[† Editor's Note: While Mr. Clay in his address described the work of 73 Trade Associations, only the activities of those connected with the building industry are here set forth.]

United States. Many do not know that the members of these associations will send their own factory experts to the brother manufacturer's plant to assist in the better production of a competing material. They do not realize that through these associations, the improvements made by one manufacturer are immediately available for all other manufacturers.

At first it would seem absurd to expect a manufacturer who has learned to prevent efflorescence, let us say, in a certain product, to give this secret to his competitors, and it did take broadmindedness to see the personal advantage in so doing, although it would be immediately granted, that the advantage to the general public is great.

One reason why such acts are frequent, is because the manufacturer who becomes imbued with the association spirit, discovers that the best thing he can do for the sale of his own product, is to have the general public realize that the material is one not subject to drawbacks when manufactured by anyone, and is a safe and proper material to specify. He realizes that he cannot get one hundred per cent of the business, and it is better for both the public and himself to take his chances in getting a smaller percentage of a larger industry which is not held back because of poor manufacturers.

Double dependence can be placed upon the products of Association members—the seller has his own reputation at stake, and all his competitors will see to it that their product is in no wise discredited by inferior workmanship or materials sold by others.

This world is a small place to live in and the advantage and friendly spirit generated by co-operation react to the benefit of all concerned.

* * * *

The Paint Manufacturers' Association at Philadelphia has developed an educational bureau which has been brought by successive steps from the bureau of promotional development and from the advertising committee.

From time to time the paint industry has been menaced by a shortage in the flax crop. Whenever this condition recurs, legitimate and intelligent as well as illegitimate attempts actuated by ignorant cupidity have been made to utilize or substitute other vehicles. The facts are at once a promise and a menace to the trade in the hands of the unscrupulous "Oil Doper." They become a menace whenever the price of linseed oil rises. In the hands of the conscientious paint technologist they promise both a reserve for emergencies and in the raw materials for new paint specialties.

The idea that the paint and varnish industries might do something to prevent the threatened abandonment or destruction of the American flax crop originated with the Educational Bureau, in 1907, when the menace of the then-existing situation was brought sharply to the attention of the trade by a failure of the crop.

No more effective work has ever been accomplished (not even by the German government), in behalf of any industry than this work for the paint industry of the United States. The committee has wisely contented itself with selecting the men who understand the subject and supplying them with the necessary funds for educational work among the flax growers. The result is an achievement that cannot be minimized, and is a credit to agricultural engineering.

The Association of American Steel Manufacturers, Pittsburgh, was pioneer in the adoption of standard specifications for structural and boiler steels and for concrete reinforcement bars rolled from billets, and these specifications were the basis of the specifications later adopted by the American Society for Testing Materials.

In September, 1916, an arrangement was entered into for co-operation between the Portland Cement Association and the Lewis Institute, Chicago, under the direction of Professor Duff A. Abrams in developing new information on concrete. The research work was carried on at the Institute but the financial support came from the Association, the whole being in charge of an advisory committee. Under this union 70 very important series of tests on concrete and aggregate have been conducted. In addition to these there are a great many physical tests in concrete materials which were carried out in connection with these series, and are incidental to their correct development.

The results of the tests on the work in these series have been combined and described in several printed papers and reports.

The National Association of Sand and Gravel Producers, Indianapolis, Ind., has started the work of the Engineering Department by conducting a series of tests, which they expect to use as a basis for drawing proper specifications for the use of sand and gravel. Heretofore, specifications for sand and gravel concrete have been adopted largely from specifications covering the use of crushed stone, which is an essentially different product.

The department will also undertake to develop new uses for sand and gravel, especially in the way of utilizing certain grades of material, particularly the smaller sizes, which, in many sections of the country, are now waste products.

By standardizing the diameters of shafts and heads of column forms for round concrete columns

the Metal Form Association, Cleveland, Ohio, have enabled member companies to carry on businees with one-half of the stock of forms formerly used which, of course, has enabled them to reduce the price to the contractor and insured a quicker delivery.

The shafts of the column forms are now made in diameters starting from twelve inches in even two-inch multiples up to fifty-four inches in diameter, and the heads are made from forty-two inches in even six-inch multiples up to seventy-two inches. Before this standardization took place, architects designed in odd inches and with heads of varying diameters.

Early during 1919 the *Gypsum Industries Association,* Chicago, organized a division of engineering. This division has prepared specifications in conformity with present accepted standards of engineering and architectural practice which cover the following:

Gypsum, raw and calcined, for structural and commercial purposes.

Gypsum plasters of all kinds.

Gypsum partition tile for the constructon of nonbearing, fireproof partitions, enclosures, furring, and the fireproofing of steel columns.

Gypsum plaster board for incombustible lathing purposes, soffit ceilings, vent ducts, etc.

Gypsum wall board as an interior surface for the walls and ceilings of ordinary joisted constructions.

Reinforced structural gypsum for the construction of fireproof roof decks, fireproofing unit shapes, and similar purposes.

The Association has recently created a fellowship in the United States Bureau of Standards. It is intended that the Association's representative will continue scientific investigations upon gypsum products which were started by the Bureau of Standards some time ago. These investigations will include extended possibilities in the use of gypsum for structural and decorative purposes.

A standing committee of the American Society for Testing Materials known as "Committee C-11 on Gypsum" is divided into five sub-committees whose duties involve research work and the adoption of specifications on the following:

Gypsum for various uses, gypsum plasters, structural gypsum, testing methods (for gypsum), nomenclature.

The *Lime Association,* Washington, D. C., in 1910 adopted standard specifications for lime drawn up by its Committee on Standard Specifications for Lime and assisted in securing the adoption of the standard lime barrel law. It was instrumental in securing the formation of Committee C-7 of the American Society for Testing Materials.

The Associated Metal Lath Manufacturers, Chicago, have made a thorough engineering study of their material and its relation to other building materials, particularly plaster and cement. Fire tests have been conducted in various parts of the country and at the Underwriters' Laboratories. In this field very definite study is being made to develop better methods of protecting lumber and in this way to aid conservation of the resources of the country.

The so-called fireproof building has received much consideration in the past but the small house has been neglected. Metal lath is being especially studied with a view toward the best service it can render in concrete as well as wooden houses. The same engineering idea that dictates the greater protection of the most vulnerable parts of a battleship is being applied to the dwelling house construction with a view toward obtaining the maximum amount of fire protection with the minimum of expenditure.

The effect of painting metal lath has been studied through weather tests in several parts of the country and the processes of all the competing companies has been made available. This project will now be given a protective coating far superior to that which has been known in the past.

The subject of sound insulation in commercial partitions has been developed through experiments at the University of Illinois, bringing out some radical departures from previous accepted ideas on this subject. An exhaustive test on thermal conductivity of exterior walls has been made by professors at Armour Institute of Technology with a view to improving the heat insulation of small houses.

All of this data is made available to the public and the building profession by bulletins.

In the common brick industry, there has recently been a conservation development of considerable importance. Occasionally a million bricks will be discolored from the ordinary run, due to longer burning or accident. It has been discovered that these bricks, which the contractors used to throw away, are harder and can be laid up in a very attractive manner and will break the monotony of a common brick wall. Already architectural campaigns are being conducted to familiarize localities with the stability and beauty of this formerly wasted product and a housing development of 175 homes is under way in Chicago, using this material. *The Common Brick Association* is studying the standardization which will affect 250 manufacturers producing 3,000,000,000 common brick per year.

The Hollow Building Tile Association, Chicago, has been instrumental in the creation of standards so that the manufacturers themselves know of the standards to work to in producing the right kind of tile.

The engineering department has prepared and is ready to submit to the various building commissions a Standard Building Code, which protects the users of tile in any community from poor tile construction. It has prepared and has issued to the building public a handbook on hollow tile construction especially for architects and engineers. It also has prepared and issued a builders' manual, being especially prepared for the small contractors. The engineering department is prepared to become consulting engineers as to the proper use of building tile to the architectural and contracting professions.

The Steel Sash Manufacturers' Association, New York, has effected a standardization of 23 types for stock sizes, which have been adopted by all the member companies and are now carried in stock throughout the United States, insuring prompt delivery and enabling the architect to design standard openings and still obtain competition from several companies. A year ago there was no standardization and at the present time 60 per cent to 70 per cent of steel sash is standardized, effecting an economy to the general public and widening the market for the manufacturers.

According to the *West Coast Lumbermen's Association:*

"The lumber industry has not given so much attention to the technical matters as the other chief structural materials manufacturers—cement and steel; largely because of the fact that these two materials are in themselves manufactured products in the making of which the producers have depended largely on chemists and engineers. Wood being already a finished product in its raw state did not require this technical help in the same way, and lumbering, being a widely distributed and pioneer industry, was developed largely from a practical standpoint."

Twenty-five years ago the practice in the lumber industry was to cut logs into whatever grades and sizes they would produce, keeping in mind at all times the idea of getting the largest possible volume of product. The lumber thus produced was usually sold "mill run" to wholesalers or jobbers who undertook to sort it for quality and sizes and to find a market for it. The development of lumber manufacturing associations has completely changed this practice.

Lumber is now graded at the back end of the saw mill plant and is put in the pile or shed in accordance with such grading according to quality and dimension. The manufacturer no longer operates his plant solely with the view to producing the largest possible quantity of material, but, on the contrary, he now knows the grades and sizes which are in demand, and he is able, therefore, to operate his mill in such way as to produce a larger proportion of those particular kinds of lumber which are needed by the consumer.

The quality of the product in the aggregate has been materially raised by the establishing of standard grades. This may be made clear by an illustration. Take a 16-foot yellow pine board which contains a large defect 18 inches from one end. Under conditions prior to the establishment of standard grades, this board would have gone on the market as a 16-foot piece, but to-day the manufacturer knows that by cutting it to 14 feet, thereby eliminating the defect, he can raise it to a higher grade which will bring a higher price, and which will meet the requirements of some consumer who has no use for the lower grade. In consequence, he manipulates the product in the mill to produce those particular grades which consumers are demanding and to eliminate, as far as possible, those grades for which there is not an active market. The result is a larger production of the kinds of lumber most needed and larger production of the better grades of lumber, and a proportionate lowering of prices on the entire output of the plant, because of its increased merchantability.

The Southern Pine Association, New Orleans, Research Department has conducted investigations or has initiated investigations which were designed to develop facts relative to the strength of timber for structural purposes. Also various investigations relative to the better means of utilizing wood for purposes where it is now used in the manner not most economically and also in the better preparation of timber material for the use it is particularly applicable. Investigations have also been conducted with a view of further utilization of the waste products incident to the manufacture of lumber and to extending knowledge of the utility of by-products as the result of utilization of wood waste. Particular attention has been given to the various properties of treated lumber and values of various methods of treatment and the proper place for utilizing wood of various types of preservation.

The American Wood Preserving Association has a membership of over 300 and since its organization in 1905 has assisted in developing wood preserving industry in this country. From 30 wood preserving plants in operation in 1905 the Association's propaganda has resulted in a growth in the number of plants to 125 in 1920. The wood treated by these plants now amounts to approximately 135,000,000 cubic feet of which nearly 75 per cent represents cross ties. The annual consumption of wood cross ties is about 115,000,000 in number and of this quantity about one-third, or 35,000,000 are chemically treated to more than double their life in track. In 1905 when the Association was organ-

ized, the cross ties treated amounted to 14,800,000; in 1919 approximately 35,000,000, indicating an increase of 140 per cent in the period of 15 years.

To encourage the development of the wood preserving industry, the American Wood Preservers' Association holds periodical meetings for its members and the public and publishes the experiences of those engaged in the wood preserving industry and those who use treated wood; also formulates specifications for wood preservatives and standardizes the methods of treating material. Investigations are made by special committees appointed by the Association to record the developments in the various branches of the wood preserving industry. These committee reports are published in the Association's annual proceedings for general distribution.

The primary aim of the American Wood Preservers' Association is to promote knowledge of wood preservation with the view of conserving our forest resources.

The National Association of Electrical Contractors and Dealers, New York, has prepared, in co-operation with American Institute of Architects, certain standard symbols for use on drawings and helped prepare the standard conduit sizes for certain sizes of wire which were embodied in the Electrical Safety Code. There are Committees on Standardization, National Electrical Code, House Wiring Central Stations, Architects, and Engineers. There is also a Committee on the Standardization of Attachment Plugs and Receptacles.

The Elevator Industry was one characterized by complete lack of harmony before the war. Personal rivalry and sharp practices in business existed. At a meeting called by the Chamber of Commerce, the entire industry was represented by some 50 men, in a large part owners of the various businesses. The result of this meeting, fostered by the Chamber of Commerce and in connection with the War Industries Board, was that decided improvements were made in the construction of elevators, and at the present time they are engaged in a program of standardization, which is supported by the *Elevator Manufacturers' Association of the United States,* The American Institute of Architects and The American Society of Mechanical Engineers, and a definite accomplishment is the preparation of the elevator code covering all classes of elevator work, which will be sanctioned by the architects and engineers and Bureau of Standards. It has taken some three years to prepare this, and they expect to issue it this Spring as a publication of the Elevator Manufacturers' Association of the United States, for guidance of architects, municipalities, state boards, etc. It naturally represents the ideas of the entire industry in such a way that any of the manufacturers can operate, and the desirable feature is that it advocates betterment of conditions. On account of the importance of elevators, they feel that it will be of great value to the public.

The American Association of Refrigeration, Chicago, has the following commissions which are engaged in standardization or research work: (1) Commission on Gases and Units, which deals with the physics and chemistry of refrigeration, (2) Commission on Testing Refrigerating Machinery and Insulating Materials, which concerns itself with matters of the design, construction, operation and methods of testing refrigerating machinery and materials, (3) Commission on Industrial Refrigeration, which takes up the use of refrigerating apparatus in the industrial arts, (4) Commission on Railway and Steamship Refrigeration, which considers all matters pertaining to car icing, precooling, car construction, insulation and uniform regulation.

The Association has co-operated with the Bureau of Standards for a number of years in investigations of the physical properties of refrigerants.

And at the other extremity we have *The National Warm Air Heating and Ventilating Association,* Columbus, Ohio, which has a Committee on Engineering and an Advisory Committee on Warm Air Furnace Research, which supervises the research looking to increasing the efficiency of warm air furnaces which is being conducted at the University of Illinois.

Some standardization of products was accomplished during the war through the Association's War Service Committee, and Formula and Rules for Installation of Warm Air Heating have been published by the Association.

The Magnesia Association of America, Philadelphia, was formed about 3 years ago to carefully investigate the subject of heat insulations and to give publicity to the value of 85 per cent magnesia for such work.

A Technical Committee, consisting of two engineers in the employ of two Member Companies, was created, and a Fellowship in the Mellon Institute of Industrial Research, University of Pittsburgh, was secured. The Technical Committee and the Mellon Institute work in very close harmony and the results of their efforts are being given publicity by the Association in the form of advertising in trade and technical magazines, booklets, specifications, etc.

These investigations from an engineering standpoint have been especially interesting in that when the work was commenced it was quickly realized that all previous experimentation had been based

on one certain type of condition, whereas, in practice, there are so many different conditions under which high pressure steam is employed that it has been necessary to do a very great deal of pioneer work in basic experimentation with bare pipes and boiler surfaces before the actual work of testing insulating efficiencies could be begun.

The function of the Mellon Institute and the Technical Committee, in addition to the above, is to standardize methods and processes of production of magnesia, and a great deal of work has been done, and is under way, along this line.

The Asbestos Textile Manufacturers' Association also maintains a Fellowship in the Mellon Institute, designed to test and endeavor to standardize weights, qualities and uses of products made in that branch of the asbestos industry.

* * * *

Engineering education is based upon properties of materials, analysis of cause and effect, and investigation. These are three principles on which the Trade Association justifies its position without the question of a doubt. Engineering implies impartiality in the measure of products through the cold glasses of scientific observation. It teaches the basic principles upon which to depend. It has studied the unfolding of science and invention, and realizes that articles of commerce are subject to constant developments—that new ideas, however small they may seem at first, must be given full consideration, as a small idea with the basis of fact has, and again may, revolutionize a big industry. Engineering knows what is best today may not be best tomorrow; not from the standpoint of style or popularity, for these are matters for sales managers to predict, but from the standpoint of the usefulness or economy of the product itself; and it is constantly seeking material improvement.

As so ably expressed by Mr. Herbert C. Hoover when he accepted the Honor Award of the Western Society of Engineers recently, for engineering the distribution of the world's food supply:

"I could not accept it for myself because in those organizations where I have had the honor to preside there has been a large preponderance of engineers, volunteers from our own American profession. First in the Belgian Relief, then the Food Administration, then again in the Supreme Economic Council I have had associated with me first and last over 1,000 American engineers. It has been the ability of these men, their capacity and constructive thought, that quality of engineers which leads them to quantitative thought and not qualitative thought , is the basis upon which organization in emergency can and must succeed."

The Engineering education frequently neglects human relations—a most important element in the Trade Associations. Publicity, Psychology, Economics, Law and other similar studies are not generally covered in engineering courses.

Such considerations as these are of great importance in this work for it is clearly up to the association manager, not only to develop new methods and ideas, but also to "sell" them to the association members and the public. In this work the engineer cannot stop at the rendering of his report, but must see that the results of his determinations are accepted commercially for the good of his industry and the public. The commercial side is as important as the technical.

The public is apt to think that the "bookworm" or "grind" is the typical engineering student because the public knows that hard application is necessary to graduate. But there are as many hand clasps among engineers as among any other men. Students who take part in fraternal and undergraduate activities have an unusual opportunity for social contact with their fellows, and to develop a great appreciation of the fact that this world is full of people as well as materials.

The Greek and Latin courses were not used in order to fluently read Plato or Cicero but as a "means" of education. The Engineer has been justly proud of his training, but he has considered it as an "end" instead of a "means" of education. He has been slow to branch out of purely technical work and the public considered that as his limitation.

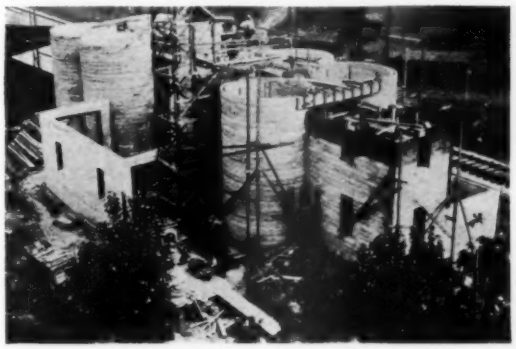
But this is rapidly changing. The Engineering education is selected more and more by those who wish to cope with the great problems of the modern material world. The Engineering education is being recognized and many corporations have adopted a policy of employing only engineers on their sales forces. Bankers and business men are now educating their sons to follow their footsteps in commercial life through a course in an Engineering College.

Where can we turn for a scheme of education than can more profitably be used to the benefit of competing industry?

We cannot expect perfection in anything, but must look for the best we can find, hoping to develop the courses and the human product where they can be of as great service to commercial life as they have proven themselves in the more purely professional fields. On the other hand, the development of the Trade Associations may develop the need of a new Profession of Industrial Engineering with its own course. This will attract students who will fill the double requirement of commercial and technical tendencies.

Double Concrete Walls Used in Construction of Ohio Grain Elevator

THE relative merits of single and double walled construction have received much attention from those connected with the building industry for many years. The double wall possesses an indisputable advantage, so far as maintaining a more even temperature within the space enclosed by it is concerned, in preventing the passage of moisture through the wall and in practically eliminating condensation on the interior. The main drawback to such a type of wall has been from the constructional standpoint. Double brick walls tied together by withes proved not altogether satisfactory, and moisture found its way through at these connecting withes. Hollow building blocks do not provide a continuous air space due to the connecting cell walls and mortar joints, although



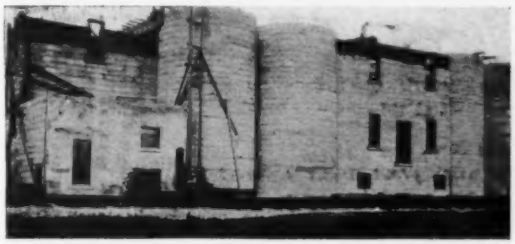
DOUBLE WALLS BUILT IN SUCCESSIVE TIERS

the production of such blocks is a development in the right direction.

If there is no physical connection between the outer and inner wall sections or shells, the construction will naturally provide more efficient insulation. Walls of concrete so constructed seem to have been developed which are structurally safe, and can be erected without serious construction difficulties.

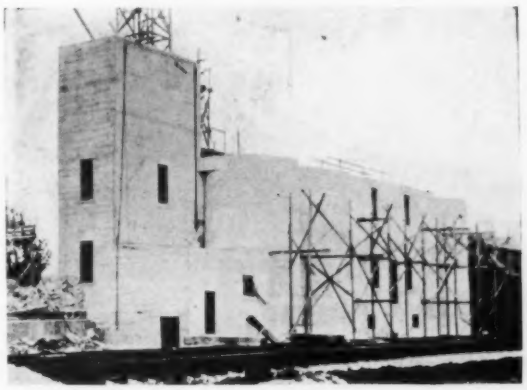
There are many types of buildings in which a type of insulated wall can be used to advantage. In the accompanying illustrations, construction views of the Powers Grain Elevator at Genoa, Ohio, are shown. This structure was designed by Robert L. J. Wagar of the firm of Homberger and Wagar, Engineers, Sandusky, Ohio.

The walls were constructed in accordance with what is known as the Van Guilder system, in which a double mold, without bottom or ends is employed. The footings are placed as for any other type of masonry construction, the double wall starting above the footings. In commencing the wall this mold is

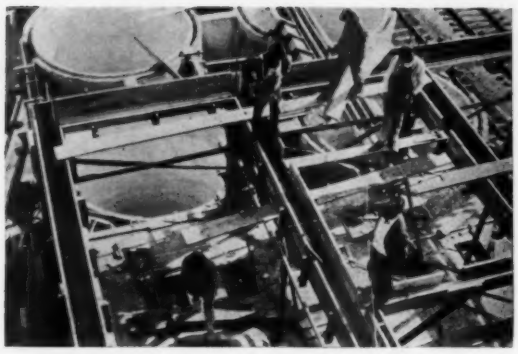


WALLS NEARING COMPLETION. NOTE HORIZONTAL LINES SHOWING PROGRESSIVE TIERS

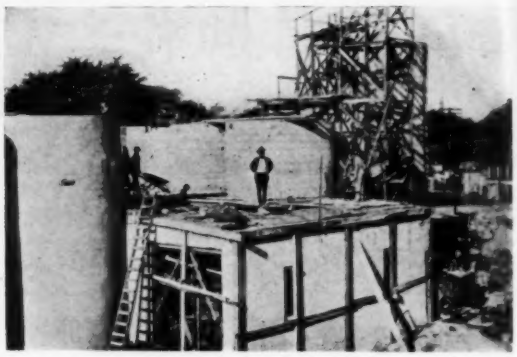
placed on the footings, the two sides filled with a stiffly mixed concrete and well tamped. The mold is immediately released and pushed ahead, ready for re-filling to form the next section. This process is repeated until a complete circuit is made. Each such operation completes a tier of wall nine inches high. By the time one tier is completed, the concrete at the starting point has set sufficiently to permit the starting of the next tier on top of it. The outer and inner shells of each tier are tied together by galvanized metal ties and the concrete reinforced laterally. The exterior surface is stuccoed. The lines of the progressive tiers are clearly defined on



STUCCO WORK PRACTICALLY COMPLETED. LIGHT SCAFFOLD USED BEING TAKEN DOWN



VIEW LOOKING DOWN. DOUBLE WALL CONSTRUCTION CAN BE CLEARLY SEEN

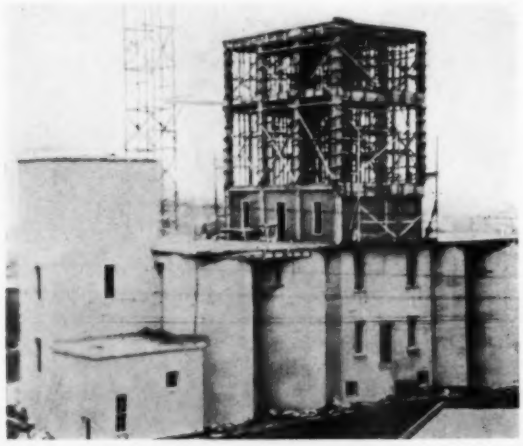


EXTERIOR STUCCO WORK IN PROGRESS

the work prior to the exterior surfacing. In applying this it was necessary to erect a light scaffolding, which can be seen in one of the photographs.

The concrete was mixed and conveyed to the required level by the hoist shown, and thence transported by wheelbarrows to the location needed. Plank decking was used where necessary as the structure progressed in height. The walls were constructed by the Sandusky Double Wall Company.

In connection with the construction of such buildings, where the contents bring lateral pressure on the walls, the intensity of this pressure increasing from top to bottom, it is important that the reinforcement be carefully computed, and properly placed, to prevent failure after the structure is filled to capacity.



POWERS GRAIN ELEVATOR, GENOA, OHIO
L. G. Wagar, *Designing Engineer*

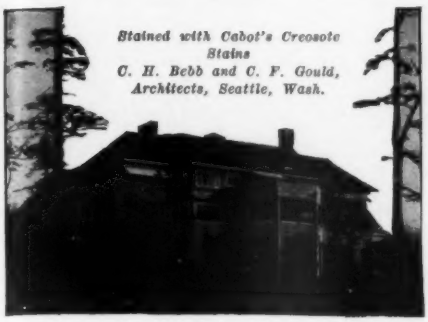
Book Review

RETAINING WALLS—THEIR DESIGN AND CONSTRUCTION: BY GEORGE PAASWELL, C. E. CLOTH 6x9—PP. 269, ILLUSTRATED. McGRAW-HILL BOOK COMPANY, INC.

While the subject of retaining walls is not one of major engineering importance, yet the improper design or construction of these would invalidate many important engineering structures of which they form a link. The correct method of determining the forces to be resisted by a retaining wall has always been, and still is, a debatable one among modern engineers. As stated in Chapter I, no trace of any theoretical basis for the design of retaining walls can be found prior to 1687. Undoubtedly sound empirical rules were in use by the ancients, as their works testify. In the book, of which Mr. Paaswell is the author, a review and study of various theories and rules bearing on the subject are made, and a recommended form of procedure given for determining the exterior forces. The author seeks to place emphasis on the importance of correctly designing the wall, and to this end the problems of design of various types of walls as well as their construction are entered into fully. Considerable space is devoted to concrete walls. The importance of the construction plant and various methods of construction are described in the latter part of the book.

HOW TO USE CEMENT FOR CONCRETE CONSTRUCTION: BY H. COLIN CAMPBELL, C. E. CLOTH 5x7½—PP. 380, ILLUSTRATED. STANTON AND VAN VLIET COMPANY.

This book deals largely with methods of construction for various buildings and structures commonly associated with farm life. While not strictly speaking a technical work, it contains much valuable data for the farm owner or builder not regularly engaged in concrete construction work. The message of the book is to urge the construction of a more permanent type of building for these uses, and points out the economy thus attained due to the elimination of endless repairs.



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C. H. Bebb and C. F. Gould, Architects, Seattle, Wash.

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The rich, transparent coloring effects are more appropriate and beautiful than any other colorings, and they wear better, cost less, and are easier to apply. "Painty" effects spoil the beauty of the wood, and paint costs twice as much. The creosote thoroughly preserves the wood. Don't buy stains that smell of kerosene; they are dangerously inflammable.

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Parallel with texture and craftsmanship are the *Colors* of Tudor-Stone. They are all nature's colors, not the added pigments of artificial products, but colors such as nature produces. Both fixed and weathering colors are available and our service is always ready to explain what Tudor-Stone can do.

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A mantel of dignified proportions suitable for living room

Todhunter MANTELS

EARLY ENGLISH AND COLONIAL REPRODUCTIONS IN WOOD AND MARBLE

Fireplace Accessories

An importation just received from England includes some interesting old marble mantels and fretted brass fenders.

HAND FORGED HARDWARE FOR THE COLONIAL HOUSE

Thumb Latches, Hinges, Bolts, Shutter Hooks and other pieces to form a complete set can now be furnished for quick delivery.

Ask for Plate 10 of illustrations

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Late Quotations in Building Material Markets

(Price quotations now current on building materials and supplies as quoted by dealers and jobbers for delivery in New York, Chicago, San Francisco, Seattle, and Birmingham follow. The quotations set forth are placed before readers of THE AMERICAN ARCHITECT to afford an accurate review of market conditions, rather than for use as a basis for actual purchase. They will not only provide knowledge of the exact state of the market as to items quoted, but will also present a basis to judge conditions as affecting correlating materials.)

	New York	Chicago	San Francisco	Seattle	Birmingham
BRICK					
Common	$30.45	$14.00	$17.50	$20.00	$28.00
Face brick	55.00 to 60.00	30.00 to 40.00	60.00 to 62.50	65.00	45.00
BURNED CLAY (Delivered on Job)					
Block partition:					
3 in., per sq. ft.	0.13	0.10	.....	0.10½	.....
4 in., per sq. ft.	0.15	0.11	.....	0.10	.....
Wall coping (single slant):					
8 in., per lin. ft.	0.16	0.22	.....	.....	0.22
12 in., per ft.	0.26½	0.33	.....	.....	0.32
18 in., per ft.	0.54	0.66	.....	.....	0.52
(Corners and angles four times the price of one foot of coping the same size)					
CEMENT					
Per bbl. in 15-cent bags (rebate 60 cents per bbl. for bags)	3.80	3.25	3.63 to 4.00	....	4.50
FINISHED IRON AND STEEL (Mill Shipments)					
Bar iron, refined grade	.....	.....	.....	6.00	.....
Bar iron, double refined	.....	.....	.....	.....	.....
Soft steel bars	2.62 to 4.52	.....	.....	6.00	4.00
Shapes	2.72 to 4.27	.....	.....	6.00	.....
GLASS (Discounts from Manufacturer's Price Lists)					
Single strength, A quality, first three brackets	76%	77%	.....	.....	.....
Single strength, B quality	76%	77%	.....	83%	.....
Double strength, A quality	77%	79%	.....	83%	.....
Double strength, B quality	79%	79%	.....	.....	.....
GYPSUM					
Plaster board:					
27x28x1	.....	.....	.....	.....	.....
27x48x ½	0.45	.....	.....	.....	.....
32x36x ¼	0.28	0.28	.....	.....	0.40
32x36x ⅜	0.29	0.32	.....	0.36	.....
32x36x ½	0.35	.....	.....	.....	.....
Plaster blocks:					
2 in. solid, 12x30, per sq. ft.	0.13	0.15	.....	.....	.....
3 in. hollow, 12x30, per sq. ft.	0.13	0.15	.....	.....	.....
4 in. hollow, 12x30, per sq. ft.	0.14	0.17	.....	.....	.....
6 in. hollow, 12x30, per sq. ft.	0.21¼	0.25	.....	.....	.....
HOLLOW TILE					
2x 8x12 partitions, per 1,000 sq. ft.	.....	.....	80.00	.....	.....
3x12x12 partitions, per 1,000 sq. ft.	.....	150.00	108.00	105.00	112.00
4x12x12 partitions, per 1,000 sq. ft.	.....	160.00	125.00	120.00	126.00
6x12x12 partitions, per 1,000 sq. ft.	.....	230.00	154.50	170.00	168.00
8x12x12 partitions, per 1,000 sq. ft.	.....	300.00	222.50	230.00	224.00
10x12x12 partitions, per 1,000 sq. ft.	.....	350.00	276.00	.....	.....
12x12x12 partitions, per 1,000 sq. ft.	.....	400.00	.....	.....	.....
2x12x12 split furring, per 1,000 sq. ft.	.....	73.80	108.00	.....	.....
LATH					
Eastern spruce, per thousand	18.00 to 20.00	16.00 to 18.00	18.00 to 20.00	....	.....
No. 1 white pine, per thousand	15.00 to 18.00	.....	21.00 to 22.00	.....	.....
No. 1 hemlock, per thousand	15.00 to 18.00	16.00 to 18.00	18.00 to 20.00	12.50	.....
No. 1 yellow pine, per thousand	15.00 to 18.00	16.00 to 18.00	18.00 to 20.00	.....	20.00
LIME					
Common, 200 lb. bbls., per bbl.	3.80	1.75	2.75	2.85	2.50
Finishing, 300 lb. bbls., per bbl.	19.50	.....	.....	3.00	2.50
Hydrated, in paper bags, per ton	.....	20.00	.....	25.00	2.50
LUMBER (Retail Prices per Thousand Delivered)					
Yellow pine, No. 1 boards, 1x6	80.00	95.00	.....	.....	125.00
Yellow pine, B, and better flooring (plain)	130.00	135.00	.....	.....	135.00
Douglas fir, 6x6 to 12x12	80.00	77.00	56.00	34.00 to 36.50	.....
Oak, quartered, 1 in., F. A. S.	325.00	370.00	500.00	.....	.....
Oak, plain, 1 in., F. A. S.	225.00	260.00	320.00	.....	200.70
Oak flooring, ¼ quartered, white	220.00	370.00	490.00	.....	.....
Maple, 1 in., F. A. S.	180.00	185.00	270.00	.....	.....
Maple flooring, ¼ clear	175.00	370.00	280.00	.....	.....
Mahogany, 1 in., F. A. S.	.....	225.00	500.00	.....	.....
Spruce, 10 in.	85.00	80 to 140	104.00	.....	.....
Cypress, 1 in., F. A. S.	150.00	150.00	.....	.....	.....
METAL LATH					
Under 100 sq. yd., per sq. yd.	0.40	.35	.....	0.42	0.42

DEPENDABILITY

ATLAS-WHITE
is a true Portland Cement; pure white in color and therefore ideal for the finish coat of all-white stucco. Its higher accentuation of the values of color aggregates in the production of various color tones is still another reason for using Atlas-White—On The Job.

THE ATLAS PORTLAND CEMENT COMPANY

New York Boston Philadelphia Birmingham
Chicago Dayton Minneapolis Des Moines St. Louis

Upon request we will promptly send to architects **one or all of** *three books:* ***"Color Tones in Stucco,"*** *"Non-Staining* ***Mortar for Pointing,*** *Setting and Backing,"* ***"Cast Stone."***

ATLAS WHITE

Late Quotations in Building Material Markets—*Continued*

	New York	Chicago	San Francisco	Seattle	Birmingham
PIPE					
Cast iron:					
6 in. and heavier	$67.30	$76.80	.....	$92.50	$65.00 to 66.00
4 in.	73.30	79.80	.....	.....	68.00 to 69.00
3 in.	.....	86.80	.....	.....	.....
(And $2 additional for Class A and gas pipe)					
(Discounts to jobbers for carload lots on the Pittsburgh basing card; freight rates from Pittsburgh to New York, and also from Pittsburgh to Chicago, in carloads, per 100 lbs., are 27c. An additional 5 per cent discount is allowed to large jobbing interests over those listed below.)					
	F.O.B. Pittsburgh	F.O.B. Chicago			
	Butt Weld				
Wrought:					
Steel:					
Black, ⅛ to 3 in.	47 to 54 %	38 to 45.1%	.....	34 to 41	.....
Galv., ⅛ to 3 in.	20½ to 41½%	10.1 to 30.1%	.....	31½ to 28	.....
Iron:					
Black, ⅛ to 1½ in.	34½%	11.9 to 22.6%	.....	16½ to 21½	.....
Galv., ⅛ to 1½ in.	+25 to 18½%	+39.9 to 4.6%	.....	3½	.....
	Lap Weld				
Steel:					
Black, 2½ to 6 in.	50 %	41.1%	.....	.....	.....
Galv., 2½ to 6 in.	37½%	27.1%	.....	.....	.....
Iron:					
Black, 2½ to 6 in.	30½%	18 %	.....	.....	.....
Galv., 2½ to 6 in.	17½%	3.6%	.....	.....	.....
PLASTER					
Neat wall cement in 15-cent bags, per ton	23.50	20.00	$18.00 to 20.00	24.50	24.00
Finishing plaster	25.00	20.50	19.50 to 21.00	26.00	24.00
Lath mortar, in cloth bags, per ton	16.50	.....	.....	.....	.....
RADIATION					
Discount from list on standard heights	37½%	41 to 42.7%	.....	41%	44.45%
REINFORCING BARS					
High carbon steel from mill	48.50	.....	47.50	45.00	.....
Medium steel from mill	48.50	.....	55.00	45.00	4.75
ROOFING MATERIAL					
Tarred felt paper:					
No. 1—25 lbs. to 100 sq. ft., per ton	102.00	95 to 100	.....	120.00	95.00
No. 2—16 lbs. to 100 sq. ft., per ton	81.25	95 to 100	.....	110.00	95.00
No. 3—12 lbs. to 100 sq. ft., per ton	81.63	95 to 100	.....	100.00	.....
Rosin sized sheathing, per ton	75.00	.....	.....	110.00	.....
Corrugated roofing, galvanized, 2½ in. corrugation, over flat sheets, per 100 lbs.	0.30	.....	.....	.....	.....
SHINGLES					
Red cedar, 5 to 2, clear, per thousand	15.00	10.00	16.00	6.00	12.00
White cedar, extra star, A star, per thousand	16.00	9.50	17.00	5.75	.....
SLATE ROOFING					
	F.O.B. Cars Quarry Station				
Pennsylvania:					
Best Bangor	$8.00 to $11.00	.....	.....	.....	.....	9.00 to 18.00
No. 1 Bangor Ribbon	8.00 to 9.00	.....	.....	.....	.....	.....
Pen Argyl	7.75 to 8.25	.....	.....	.....	.....	.....
Peach Bottom	10.50 to 12.50	.....	.....	.....	.....	.....
No. 1 Chapman	7.75 to 8.75	.....	.....	.....	.....	.....
Vermont:					
No. 1 Sea Green	5.00 to 8.50	.....	.....	.....	.....	27.00
Unfading Green	6.50 to 13.50	.....	.....	.....	.....	27.00
Red	12.00 to 22.00	.....	.....	.....	.....	30.00
Maine:					
Brownsville, U'f'g Black, No. 1	14.00	.....	.....	.....	.....	.....
Slater's felt, 30 lb. roll	2.00	.....	.....	.....	.....	3.00
Slaters' felt, 40 lb. roll	2.25	.....	.....	.....	.....	3.25
STRUCTURAL STEEL					
Beams and channel, 3 to 15 in., per lb.	3.47	3.47	4.45 to 5.30	4.70 to 5.00	.06 to .0675
Beams and channel, over 15 in., per lb.	3.57	3.57	5.00 to 5.40	.....	.06 to .0685
Angles, 3 to 6 in.	3.47	3.47	5.30 to 5.40	4.10	4.70
Zees and tees	3.57	3.47 to 3.52	4.50 to 5.05	.....	.....
Steel bars, half extras, from mill	4.00 to 4.75	.....	5.30	4.00	.....
STUCCO					
In cloth, per ton (white, mixed)	22.50	20.50	.....	.....	.....
STUCCO BOARD					
Medium weight stucco board, plain, per thousand sq. ft.	65.00	65.00	.....	.....	65.00
Medium weight stucco board, creosoted, per thousand sq. ft.	70.00	70.00	.....	.....	70.00
Heavy weight stucco board, plain, per thousand sq. ft.	75.00	75.00	.....	.....	75.00
Heavy weight stucco board, creosoted, per thousand sq. ft.	80.00	80.00	.....	.....	80.00
Medium weight stucco board, plain, narrow key, per thousand sq. ft.	75.00	75.00	.....	.....	75.00
Medium weight stucco board, narrow key, creosoted, per thousand sq. ft.	70.00	70.00	.....	.....	70.00
Insulating board, heavy felt background, per thousand sq. ft.	70.00	70.00	.....	.....	70.00
SHEATHING BOARD					
Heavy weight, sheathing board, per thousand sq. ft.	70.00	70.00	.....	.....	70.00
Medium weight sheathing board, per thousand sq. ft.	63.00	63.00	.....	.....	63.00
Stucco or plaster board, sheathing board and insulating board are in rolls containing one sheet 25 ft. long and 4 ft. wide (100 sq. ft.).					
WALL BOARD					
Wall board, shipped any length, 4 ft. wide, per thousand	45.00	60.00	.....	60.00	53.00
Packed flat in cars if ordered in less than car lots. Add $5.00 per thousand ft. for crating.					